STRUCTURE AND AGENCY IN

SMALL-SCALE PRODUCTION:

AN HISTORICAL ARCHAEOLOGY OF THE

CLAY TOBACCO PIPEMAKERS OF KENT.

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ABSTRACT

This thesis presents a study of a Kentish industry based on small-scale production. Its focus is the workers making clay tobacco pipes. Although there are many surveys of clay tobacco pipes, few have commented specifically on the pipes made in Kent. My research is unique in that there has been no previous investigation of Kent pipemakers.

While structuration theory provides the orientation of the thesis, it is helpful to develop this approach in ways that permit the separate consideration of the structures and agencies present in the pipe industry. Some structures require detailed consideration, for example the importance of kinship systems and the particular qualities of the market for pipes and of the nature of the pipes themselves. The agents, principally the pipemakers, are studied; their evolving *doxa* is considered, as is their changing comprehension of and response to the problems and opportunities they faced. Previous research in Historical Archaeology is reviewed – both of that using structuration and that looking at aspects of the clay tobacco pipe industry. The thesis makes a fresh interpretation and new application of structuration theory.

Documentary material is employed extensively and critically. Particular use is made of Directories, Census Records and Probate Inventories. Evidence is also prepared from the interpretation of demographic and trade records. Biographic case studies are presented in order to maintain a focus on the workers and to take forward an understanding of their lives. Contacts between pipemaking families are revealed; some cross considerable geographical distances and others span several generations. The pipes themselves and artefacts associated with pipemakers are important in this study. A typology for Kent pipes is presented but this thesis moves beyond that to discover what pipes say about the social situations in which they were made.

An assumption that pipemakers were always poor is questioned by the material presented here. Evidence is shown for the involvement of both genders in this industry in Kent. The thesis reveals that initially the workers in the pipe industry in Kent demonstrated entrepreneurial zeal and were quite prosperous. In many ways they are shown to be harbingers of the Industrial Revolution. However, the workers did not continue in this spirit. The ways in which pipemakers responded to competition are considered. The industry waxed and waned. This thesis shows why, in the late nineteenth century, the pipe workers in Kent saw their livelihood fail while some pipe entrepreneurs beyond Kent continued to trade successfully into the twentieth century. The lack of local large-scale industrial development and the degree of industrial isolation of Kent are suggested as explanatory factors.

The thesis, whilst acknowledging the materiality of pipes and pipemaking, counterbalances previous pipe studies that emphasise typology with a more nuanced biographical approach placing people – the pipe makers – central stage.

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CHAPTER 1 – INTRODUCTION

Clay pipe debris may be considered ubiquitous. Certainly these remains can be found today not only in the upper contexts of most archaeological sites but also in gardens and parks, on river foreshores, in Victorian and earlier dumps, and, in short, almost everywhere visited by people in the UK between the late sixteenth century and the outbreak of the First World War. Although it is a hundred years since clay pipes were a significant smoking medium, many remain, unused, among the trinkets of family possessions. The pipes testify to the extent of clay tobacco pipe smoking that took place in Kent and throughout the UK. Much has been written about clay pipes made in other parts of the country but few researchers attempt to consider the lives of the people who worked in the pipe making industry.

The lack of a study of the pipe industry of Kent is surprising. The county of Kent is bordered by a major thoroughfare along the Thames and has many historic land routes linking London to important towns such as Maidstone and Canterbury and to the ports. Kent has had considerable significance in terms of its range of industries and as a supplier of agricultural products. In recent centuries it has been relatively densely peopled and it has been considered one of the 'home counties' with easy access to London. Despite this history, and the widespread evidence for the use of pipes in the county, very little attention has been given to Kent's pipe industry, or to those who worked in it.

There is nothing new in ignoring pipe makers, or even in overlooking pipe smoking. Shakespeare (1558 to 1616) never mentions pipes in his writings. Given that he spent much time in London, it is remarkable that he fails to note this then new habit. It is all the more surprising as Shakespeare was an actor in Ben Johnson's *'Every Man in his Humour'* in 1598 (Bevington 2014, 2-3); in this play there is specific mention of a tobacco pipe by the water bearer Oliver Cob. The tendency to ignore what became a widely and frequently used artefact is maintained into the twenty-first century. For example, the British Library's exhibition entitled *'Georgians Revisited'* covers the well-smoked years from 1714 to 1830. The accompanying exhibition book (Moria Goff, *et*

al, 2013) has a section on ‘Trades and Tradesmen’ and a chapter entitled ‘Leisure and Pleasure’. Nonetheless, there appears only one reference to smoking, while pipes and pipeworkers are not mentioned at all.

Not only are pipe remains widespread today, pipe smoking was extensively practised across society for nearly three hundred years. This thesis is written to move forward the state of knowledge about the largely forgotten people who made clay tobacco pipes, and especially those who worked in Kent. In particular, it will focus on the forces affecting the lives of workers in the pipe industry; it will reflect upon their human responses and consider any impact their actions may have had on society.

Why Kent?

Kent has many features which invite study. The county almost forms a peninsula with the Thames and the English Channel to the north, east and southeast. To the northwest is London and, as the capital city, it offers both a potential market and potential competition. London’s density of population marks it as very different from Kent. Through most of the period of pipemaking, the fringing villages in Kent (such as Blackheath and Greenwich) were not contiguous with London. Only to the west and south does Kent have an open border, to two other Wealden counties: Surrey and Sussex. The clay tobacco pipes of both of these counties have received substantial attention in the past (from David Higgins, 1981, and David Atkinson, 1977, respectively, although neither of these made the pipe industry their prime focus).

Kent is a conveniently identifiable region, with limited opportunities for the direct inward spread of people or industries other than through London. One part of this thesis will be to explore the extent to which it became dominated by London and was largely separated from the Industrial Revolution affecting other regions of the country. It has proved an interesting county to study, with a significant pipe industry that has not been researched before but which is worthy of investigation.

Some Clarifying Definitions:

1. Kent

Since the advent of pipe smoking the county of Kent has changed. This is true geographically where, for example, natural sedimentation has closed as a viable port the pipemaking town of Sandwich. There have been political changes too. The historic borders of Kent were stable until 1889 when the County of London was created. At that time the following areas, having previously been part of Kent, were transferred to the County of London: Charlton, Deptford, Eltham, Greenwich, Kidbrooke, Lee, Lewisham and Woolwich**.** Further changes occurred in the twentieth century, after clay pipe making had ceased to be important in Kent. As so much of Kent remains cohesive and unchanged throughout the time of pipemaking, this research will define Kent using the boundaries existing prior to 1889.

The Map of Kent (*Figure 1*, page 267) shows the pre-1889 borders and includes the main towns and rivers to which reference is made in this thesis.

2. Pipeworkers.

One significant area for caution is the job title linked to named workers in the pipe trade. It would appear that on many occasions it was not clear to the data recorder or the publisher what a precise title meant. It seems sometimes that the census enumerators, in particular, put down the title chosen by the respondent; whether this gave scope for the worker to mislead the recorder (or even the modern researcher) cannot be concluded with safety. Certainly this is a problem not unique to Kent Census Reports. Writing of the classification of occupations in the 1881 census of England and Wales, Woollard warns that “occupation terms are temporally, spatially and inherently confusing” and that they are “at best a good approximation of the occupations” (Woollard, 1999, 8).

The appellation ‘pipemaker’ was widely used during the period when clay pipes were made in Kent and is retained in the title for this thesis.

However, the term was used to cover a range of roles including a sole trader, a master, an employer, a journeyman and a pipe trimmer. The apparently more grand title of ‘pipe manufacturer’ need not imply a larger scale of operation or suggest the manufacturer employed anyone outside his or her family. Workers did not always stay at one level; thus someone recorded as a journeyman at one time might be seen as an employer at a different time (as was true for Henry Phillips, see the biography in Chapter Two, pages 18-20). For these reasons, unless the context requires otherwise, those engaged in the pipe industry will be described as “pipeworkers”.

3. Apprentice

Apprenticeship is another term that increasingly became confused and misleading during the period covered by this study.

Apprenticeships have a long history as an essential structure in the training for entry to many skilled trades. To some extent they restricted entry to those trades. The guilds had a significant part to play in administering the apprenticeships but their role was already subject to statutory controls before clay tobacco pipe making was introduced to Kent (the enacting of The Statute of Artificers, 1563, was a significant step in moving control from the guilds). In the seventeenth century the Incorporated Company of Tobacco Pipemakers in the Cities of London and Westminster and the Kingdom of England and the Dominion of Wales made some attempt to exercise authority. Despite the grand title, there is no evidence for its effective dominance over the nascent industry (Oswald 1975, 9).

Although initially becoming a Master was only open to men, from quite early days, evidence for the erosion of this tradition can be found in the records of Kent pipemakers. For example Elizabeth Middleton of Maidstone took male apprentices in the 1720s (Oswald 1960, 81); John and Martha Bagnall are both recorded as ‘Masters’ in Sheerness in 1737 (Kent History and Library Centre 2010 [KHLC]); others include Anne

Holloway in Maidstone (1720) (KHLC) and Amy Richards in Milton-next-Sittingbourne (1770) (KHLC). Many female pipe makers took over the running of a pipemaking business on the death of their husbands (e.g. Sarah Langley in Deptford, widow of John Langley, who continued her husband's business for at least twelve years after his death in 1744) (Woollard, undated, 3). Similarly, Mary Burstow of Greenwich operated her late husband's business for at least three years after his death in 1852 (PO Directory 1855, 371). It is unlikely that the widows often received formal training for this work but more likely they had learned the necessary skills from their husbands. Female apprenticeships did occur but they were rare; one example is Hannah Hearnday, apprenticed to James Cutbush of Maidstone in 1756 (Oswald 1975, 175). Details of the sources of these and subsequent references to pipeworkers can be found in *Table 20*, pages 272-291.

By the nineteenth century, "apprenticeships must have seemed increasingly archaic....even achieving freeman status and the right to vote lost its power" (Lane 1996, 247). In effect, apprenticeships came to indicate little more than training arrangements that were quite often set up between family members or with nearby fellow workers. During the Industrial Revolution, and through the nineteenth century, formal apprenticeships were "degenerating into the scandal of the factory child and the pauper apprentice, bound far from home to save the poor rate" (Lane 1996, 9). However in Kent, the term 'apprentice' continued to be used for young people of both sexes who took training in trades that required a high degree of dexterity and went much beyond the routine operation of machinery. The term was used in the pipe industry in Kent into the 1850s (the 1851 Census records Edward Taylor apprenticed to Thomas Cope in Paradise Place, Woolwich, in 1851).

4. Parts of a Clay Tobacco Pipe

On many occasions in this thesis it will be necessary to draw attention to certain named parts of a clay tobacco pipe. In order to avoid confusion, these are shown and explained in *Figure 2,* pages 268-271.

An Outline History of Pipemaking in Kent

The history of making clay tobacco pipes in Kent has much in common with the industry across the UK. The process of manufacture relied on the use of white clay, mainly obtained from Dorset. The technology of manufacture changed little and the norm was quickly established for pipes to be made in a mould, originally probably of wood (Higgins, 2012a) but usually of iron. Pipes tended to be made and fired in a domestic setting with all family members involved. Even when large-scale units of manufacture developed, as happened at some sites outside Kent, the norm may have been for families to have worked together (Gallagher 2012, 108). Apart from pipes made for export, few if any of which were made in Kent, they were sold within a few miles of the place of manufacture. There were occasional attempts to impose an overarching body to control the industry but this rarely had much effect. Although the industry waxed and waned over three hundred years, it was finally undermined by the more resilient briar and meerschaum pipes and the more convenient cigarette.

The detailed history of the pipe industry in the United Kingdom and in several regions has been recorded by others. Oswald outlines the introduction of tobacco to Europe and shows how it was smoked in England from the 1570s (Oswald 1975, 3). Pipes had been used for smoking in North America; Oswald notes how they were adopted and developed so that by the 1590s there was a “pipemaking industry” in England (Oswald 1975, 3-6). A history of the attempts to organise and control the industry is recorded by Atkinson and Oswald (1969, especially 172-177). Others have presented a more complete general history – for example Eric Ayto (1994) and elements of Heather Coleman’s CD *The Art and Archaeology of Clay Tobacco Pipes* (2006). Inevitably perhaps, the introduction of a new habit has attracted powerful, if probably fictional, popular tales such as Walter Raleigh (1554-1618), when smoking, having water thrown over him by a servant – a tale perpetuated regularly, for example and with illustration, by Dean Valler in the free newspaper *Metro* for 29 June 2007. But such fables apart, the main and more reliable features of the history of clay tobacco pipes are easily accessible.

Specifically, as far as Kent is concerned, the earliest documentary evidence for the pipe industry in Kent is from Thomas Cocks, auditor at Canterbury Cathedral, who recorded in his accounts diary that he paid 3d for “tabacco pypes” on 29 March 1607 (Cowper 1901, 2). It is not known how many pipes 3d bought but his accounts for the next three years indicate the purchase of pipes on four occasions and the buying of tobacco eighteen times. It seems from his accounts that smoking, using bought pipes, was an acceptable norm in his society and so it is reasonable to conjecture that the use of retailed pipes, made by specialists, was established towards the end of the sixteenth century, at least in relative elite and affluent circles and in cities. It is not known where Cocks’ pipes had been made, but given their fragility, it seems at least possible that they were made in Canterbury. The earliest pipes found in Kent come from the fringe of London and from Canterbury and were made between about 1580 and 1610. The first six Kentish pipemakers known by name from documentary evidence all come from Canterbury and were working between 1620 and the mid 1650s. The industry in Kent expanded and contracted over the intervening years before the last Kent pipemaker died in 1948 in Plumstead aged 83. However the industry had been moribund since the late nineteenth century. Evidence for the fluctuating history of the industry over 300 years will be presented as will be the reasons for these changes.

The rise of the clay tobacco pipe industry in England was at the time when the feudal system was being replaced by widening capitalism. This is not to claim an exact historical match for these events – arguably the continuation of gavelkind inheritance through the nineteenth century in Kent shows the persistence of one feudal structure at a time when the dominant economic system was capitalism (some investment consequences of gavelkind are considered in Chapter 7, page 203). However, the degree of overlap of the pipe industry with the emergence of capitalism makes this industry particularly interesting to study. It also explains the prominence given to economic forces in the consideration of structures affecting Kent pipe workers and discussed in this thesis. Arguable these structures form what Giddens calls a “structural set” (Giddens 1984, 186) which includes such related elements as price levels, demand, labour and investment. However, a wider range of structures

is considered, including kinship and the Law; an outline of the principal structures likely to influence pipeworkers is presented in Chapter 4, pages 86 and 87.

Comparison With Other Small-Scale Industries

It is important to set the nature of the clay pipe making industry alongside that of other contemporary industries in Kent. Outside agriculture, until the last decades of the nineteenth century, most Kentish industries were small. This is true not merely in the sense that there were few people employed in industries across the county but also that those engaged in the industry worked on their own or in small, often family, groups. In the case of Kent pipemakers, only rarely did as many as ten workers form a pipemaking unit. By the time larger industrial businesses were being formed elsewhere, the pipe industry in Kent was in severe decline (a discussion of this is presented in Chapter Seven).

Richard Filmer has made studies of the crafts and industries found in rural Kent and in Kentish towns since about 1750 (Filmer 1981 and 1982). Some workers were engaged in the production of goods and services which, by their very nature, were designed largely to meet the requirements of individual consumers, for example, farriers, thatchers, fence makers, tailors and sign-writers. Other industries made items in reasonably large quantities while the products were sold in small quantities at a time, often via retail outlets. Examples include clay tobacco pipes and other Kentish products such as charcoal, cider, bricks, cricket balls, printed silks and tanned leather. Many of these industries showed a base in agriculture or mineral resources which were found locally, at least in their early histories. Most were manufactured by small firms until the end of the nineteenth century. In many cases, as Filmer ruefully but so politely records, “some of the larger ...workshops were not suitable for the new techniques which have enabled most goods that were, not so many years ago, skilfully made by craftsmen, to be mass-produced or processed (often very efficiently) on modern industrial estates” (Filmer, 1981, inside cover, Filmer’s parenthesis).

The range of industries working in small-scale production units was considerable. A good number, as Filmer notes, used skilled craftsmen. In many cases, by the nineteenth century, manufacture moved to larger mass-production units outside the county (iron smelting is one example). For clay pipe makers, the introduction of alternative smoking media (such as cigarettes and briar pipes) provided their industry with a challenge that did not lead to a move to a larger scale of pipe production in Kent. The Kentish industry withered and died. In Kent clay pipe making proved to be one industry unsuited to new mass manufacturing techniques. Both in terms of the number of workers across the county and in terms of the size of each production unit, clay tobacco pipe making in Kent was consistently a small-scale industry.

A Popular Conception Questioned

Pipemakers are sometimes portrayed as almost universally poor. Colin Tatman refers to pipemaking generally as “one of the lowly occupations of London” (1994, 1). W. R. G. Moore describes a late seventeenth century pipemaker who died in Peterborough as “a reasonably wealthy pipemaker”, but apart from a clock and two curtains, his probate inventory does not suggest a high living standard; a third of the wealth of his estate was capital equipment and it is very likely that he was also a brewer as well as a pipemaker (Moore 1980, 27). C. J. Arnold, writing of pipemakers in mid-eighteenth century Southampton considers that “the poverty of some of the pipemakers should not be ignored” (1977, 35), while Christopher Hibbert sees pipemakers as among “the oppressed”, describing how in nineteenth century London pipemakers “had to make an immense number of pipes to earn a bare subsistence” (Hibbert 1975, 133). Dennis Gallagher said of pipemakers that “although skilled, (they) were near the bottom of the social league” in 1830s Glasgow (Gallagher 2012, 107). This thesis will argue that across Kent until the mid eighteenth century most known pipemakers were not particularly poor, and some had a relatively high standard of living and demonstrated a degree of entrepreneurial zeal. Later, in the first half of the nineteenth century, a career in pipemaking was not unattractive in Kent and the number of people engaged in the industry rose significantly at this time (see Chapter Six, *Figure 9,* page 143).

Research Questions

This research was provoked by two key questions:

- What changing structures did pipeworkers in Kent experience in their society; what agency did they employ and to what effects?

and

- Does structuration theory assist a comprehension of the forces active in an industry with small-scale production such as that of Kent's clay tobacco pipeworkers?

These are the major signposts that will direct the thesis. In addition a number of incidental, but significant, questions arose during the study. These include such enquiries as:

- Are the Atkinson and Oswald (1969) and the Oswald (1975) London typologies of clay tobacco pipes appropriate for a study of Kent pipes?
- Is there any evidence that the Kent clay tobacco pipe makers ever constituted a community?
- How did the wider Industrial Revolution impact upon the Kent clay tobacco pipe industry?

Such questions will provide focus through this thesis. They are sufficiently specific in what they ask and at the same time are adequately open in what they permit that the breadth and depth of this research will be made clear. Some questions will permeate the thesis and be reflected upon in the conclusion; others, while relevant to the entire thesis, are resolved at one point in this study.

Structure of the Thesis.

The questions above will be explored though the particular structuring of the thesis. A variety of approaches will be used to examine the Kent clay tobacco pipe industry. Given that both manufactured artefacts and written documents are important sources in this thesis, Chapter Two (Methodology) will be detailed and thorough. Two significant elements included in this chapter are

biographies drawn from documents and a typology suited to the pipes originating in Kent. Chapter Three (Historiography) will provide the context for this study and indicate its innovative approach. It will demonstrate how this thesis complements the existing body of literature and enlarges its compass of study. Chapter Four (Theory) is an exploration of the need for theory in studies such as this; it considers several potentially appropriate theoretical models, and defends the choice of structuration. It will review how other researchers have handled structuration theory. The chapter considers how structuration theory might be adapted and developed for work on small-scale producers such as are found in the clay tobacco pipe making industry of Kent.

This thesis explores aspects of the lives of the workers in Kent's pipe industry in Chapters Five, Six and Seven (which are broadly chronological in content). The first studies the industry's initial development until the first major setback experienced in the middle of the eighteenth century. Chapter Six covers a period of prolonged political and military difficulty during which the industry was depressed but from which it grew rapidly in the first half of the nineteenth century. This time broadly coincides with a substantial part of the Industrial Revolution. The closing years of the industry, from *c*. 1850, are the focus of Chapter Seven. These years saw a protracted attack on the clay pipe from other smoking media which eventually forced the demise of clay pipe making in Kent. Occasionally it will be necessary to go beyond the dates specified for a chapter in order to follow a particular topic or theme. At times it will be helpful to refer to the clay tobacco pipe industry in other parts of the UK.

The period under study is usually considered to be the province of post-medieval archaeology or historical archaeology. A study set within this span of years has the benefits of plentiful artefacts and a large quantity of written material. The strengths and weaknesses of these sources are considered and an attempt is made to integrate what they each reveal. This thesis uses artefactual material which has been studied specifically to provide a background of evidence culled from the pipes themselves; it does not however have a prime focus on the moulded shapes or decorations of pipes, but does make some detailed use of their typological evolution. Original

written sources (sometimes as microfiche or in digitised formats) have provided a valuable set of insights into the working lives of pipe makers. Inevitably the written and artefactual records are incomplete and at times case studies will be deployed, frequently as biographies, to illustrate the wider experiences of workers in this industry.

While this content is new and represents original research, the use of structuration as a theoretical framework for a countywide study of clay tobacco pipe making is also innovatory. Structuration focuses attention on the relationship between the agency of pipemakers and the structures of the society within which they work. This thesis will look for interaction between structure and agent and suggest new ways in which the theoretical basis of structuration may be modified in order to permit a fuller understanding of Kent's pipe making industry.

Chapter Eight (Conclusion) will reflect on the effectiveness of pipemaker agents in responding to the changing structures they experienced and, in part, created. It will ask if their agency was ever unproductive (or even counterproductive). The success and limitations of the methodology and of the theoretical stance adopted will be debated.

Most chapters include a number of figures and tables which relate to the chapters concerned. Larger tables and figures are grouped in Appendix 1, where the chapters to which they refer are indicated. Appendix 2 contains only data that is wide-ranging in its application across this thesis. *Table 20,* pages 272-291, lists every person known to have been active in the pipe industry in Kent. It was created for this thesis and was brought together from many sources. A comment on the composition of this list, and a note on the sources used, form an introduction to that Table.

It is now appropriate to consider the methodology employed in the creation of this thesis; this will be found in the next Chapter.

CHAPTER TWO – METHODOLOGY

Introduction

Dobres and Robb present a definition of methodology which is pertinent to this study of the Kent clay tobacco pipe workers. They write that “at the very least, a methodology consists of an appropriate chosen ‘kit’ of analytic research methods suited to the task in hand. But a methodology also necessitates explicit evaluation of what constitutes relevant analytic scale(s) and appropriate data” (Dobres and Robb, 2005, 160 – their parenthesis and quotation marks). The significant potential strength of historical archaeology, and its unique potency, is that it often does not simply have available a huge quantity of artefacts but that there is also a great number of written sources. Maybe an even greater advantage enjoyed by historical archaeology is that in Europe it focuses on a period which sees a significantly widening spread of literacy. The invention of the printing press and the spread of elementary education are the facilitators of historical archaeology.

Documentary evidence may be handled in different and useful ways (and be processed into digitised and searchable formats) but it can incorporate errors and mislead. It brings benefits but needs to be handled with caution. As will be demonstrated, documents carry their own weaknesses and no undue prominence will be given to information gleaned from writing above that obtained from objects or sites. Written, often printed, material will be shown to be both artefact and textual communication. Written material is a bonus enjoyed in historical archaeology, but it is not unique to the period conventionally covered by historical archaeology and is used by archaeologists whose focus is on cultures of much earlier dates.

Written records in historical archaeology may not have been created to inform posterity, although some clearly have that as one function in their compilation (arguably census returns, company records, and parish records are in part designed to pass on information to subsequent generations). There will always be a need for care, as documents can be biased or selective,

sometimes deliberately, and, like material culture, at other times by chance of survival. Hall and Silliman (2006, 4) speak plainly that “many texts are in fact constructed archives that themselves require interpretation”. Fresh understandings of written materials should always be possibilities.

Artefactual evidence is also of vital importance in this thesis. Martin Hall indicates some parity between artefact and document: “it is possible to use the material world to interpret the verbal word and the verbal word to interpret the material world” (Hall 1992, 373). Laurie Wilkie considers the challenge when different bodies of evidence fail to agree, be they oral, textual, or material. She feels the evidence might be ‘quilted together’ to create an understanding of the past (Wilkie 2006, 13). Yentsch and Beaudry (1992, 16) describe an ideal when they write: “historical archaeology should always produce results that would not have been forthcoming if text and artefact were not combined”.

Artefact and document are the raw materials, identified and ordered by methodology, in what Dobres and Robb called the “kit of analytic research methods”. This research will show that both are “suited to the task in hand” but both need careful evaluation too (Dobres and Robb 2005, 160). A similar carefully welcoming approach will be taken to “the cross-cutting influence of different disciplines (archaeology, history, literature, etc.) [which throw] up a series of unexpected theoretical debates that enrich archaeological discourse as a whole” (Johnson, 2010, 198, his parenthesis, my squared brackets). The pedagogic or epistemological label will be seen as of less significance than using whatever evidence may be uncovered to explore the subject under review. However, largely by virtue of the quality and quantity of the contemporary written material available, the thesis places itself at the historical and documentary end of the spectrum reflected in historical archaeology.

In part, this chapter records the search for documentary and artefactual information. It will consider how it has been discovered and used and highlight some of the strengths and weaknesses of the data assembled. It will raise

awareness of the values and limitations of pipe typologies, showing a preferred model, created for and used in this thesis, which will help reveal something of the structures and agencies active in the pipe industry in Kent. Discussions about the dominant theoretical approach used and of the historiography of clay pipes merit individual chapters in their own right and are not given full consideration here. This chapter will recognise the limits of the research bases used. Furthermore, it will acknowledge that there are some topics that may have relevance to clay pipes but which cannot be studied in detail in this thesis. Examples of these include the social rituals and customs attached to smoking, the techniques of smoking and the changing nature of the tobacco smoked. There is not scope here for any comprehensive study of the moulded iconography of later clay pipes. The prime focus will be on the clay tobacco pipe makers of Kent. The thesis will use a chronological approach and apply a structurationist theoretical stance. At times it will be necessary to look more widely at this industry and to consider aspects of the pipe making industry country-wide and in other areas of the UK.

Documentary Sources

The documentary sources are varied; they include such contemporary sources as probate inventories, commercial directories and census returns. These have been used to create the database of named Kent clay pipe workers (*Table 20,* pages 272-291). Although the value of these historical records is considered in the chapters to which they relate, there are some general points that need to be made here. As noted in Chapter One, the names ascribed to the various jobs undertaken in the pipe industry are not stable or precise. A “pipe maker” may be a job title taken by an entrepreneur or by his or her employee. Some workers were at one time masters (i.e. potential employers) and at other times journeymen (i.e. employees). Other potential errors can be fostered by the tradition of shared Christian names within a family; the uncertainty of the dates and places recorded for births; and the continued use of the name of a deceased entrepreneur as appellation for a business. Certainly census records can be unreliable in these respects, as the illustrations below will make clear. Nonetheless, documentary evidence held in census records is particularly valuable; with successive censuses, the

quantity of potentially useful material gathered and preserved increases. A limitation is that the data is gathered only every tenth year. A strength is that the data held up until the 1911 Census can be searched electronically, although the searching is limited to fields prescribed by each search engine deployed. For example, Ancestry will not permit censuses to be searched by occupation before the 1911 Census.

Given the heterogeneous nature of the documentary evidence, there was no suitable all-embracing recording sheet that could be devised. The documents were read, key information noted and, if necessary, the original was copied (as with eighteenth century probate inventories that required a degree of further study and interpretation before they became useful).

Almost fifty Kentish directories and similar works of reference were published within the time frame of clay tobacco pipes and they offer a variety of information. The data held in directories is more uneven than that in the census records. A few directories go though many editions and produce a changing picture of the patterns of trade and of social activity in the county. The most complete of these, from the viewpoint of the pipe industry in Kent, is Kelly's Directory of Kent with at least 23 editions between 1887 and 1924. Others such as the Post Office Directories cover Kent along with adjoining counties. Some focus on earlier years; Pigot's for example started in 1823/4. One of the earliest is The Universal British Directory of Kent published in 1792. Some have but a single publication (for example Melville on Kent in 1858). A few directories, gazetteers and almanacs are purely local, such as the Salmon's Sevenoaks Directory of 1908. There is a wealth of data in this literature but there are problems created by the erratic publication of the material and by the inevitable inconsistencies in presentation and recording that multiple authorships create. A limiting factor is that little is digitised or available on the Internet. One attempt to put directories on line is the Historical Directories of England and Wales Project based at Leicester University. The project appears to have experienced funding difficulties which for several years limited to six the digitised directories covering Kent. In 2014 the obsolescent software and hardware used by this project were replaced

and there are now eighteen directories available, with a bias towards the late nineteenth century.

Freedom Rolls and Voting records are available, sometimes collated on to searchable in-house databases, e.g. the Apprentices' Database produced by the Kent History and Libraries Centre. The publications of local Historical and Archaeological Societies are considered in Chapter 3, Historiography.

Documentary evidence is not changeless; fresh material is uncovered and new methods of interrogation introduced. The consequence is that it is necessary, for the sake of consistency, to identify a date after which no new material can be accommodated. Thus the record used in this thesis for known Kent pipe workers was frozen in January 2014 even though subsequently new information might add to that list, and possibly provide clarifications or identify errors.

The thesis will make appropriate use of case studies; in this Chapter they appear as 'Biographies'. These focus on what is relevant to pipemaking; they are not full life biographies. They acknowledge the fact that in post-medieval archaeology the data available is uneven in quality and in distribution. At times a case study has to stand as a representative of other data currently not available or accessible. Dobres and Robb support the use of good case studies when they write that they "move the discipline forward....not just because they apply some abstract theory to a material problem, but because they suggest new ways to see and make sense of that pattern. Thus, a case study is theory in its own right....They should also provide new ways of thinking about, studying and appreciating the archaeological record" (Dobres and Robb 2005, 162-163). Case studies attempt to bring together a cohesive example of what elsewhere might only be seen in fragmented or occasional forms. They provide a biographic approach which indicates some of the actions taken following the choices made by actual people as they responded to a selection of the structures experienced in their real lives.

The two following examples will draw upon a variety of documentary evidence, in particular the UK Census Records. They show the degree of detail available but also highlight the difficulties and therefore the limitations of using nineteenth century documents. The references demonstrate how documentary sources created the biographies.

The biography of Henry Phillips provides an example of the mobility of pipemaker families and of changing roles individuals filled in the pipemaking trade. Henry is also known as Henry J Phillips and H J R Phillips.

Biography for HENRY PHILLIPS

1864 born in Chatham, Kent, to Henry Phillips, a hammerman born in 1841, and Elizabeth, a dressmaker born in 1842, both from Chatham (*UK Census Records* 1871 for Gillingham, Kent, Enumeration District (ED) 47, p30).

1871 Henry, aged 7, was a scholar, living with his parents in Chatham. At this time, his grandfather, John, born in Chatham in 1816 but now living in Ashford, Kent, was described as a "Tobacco Pipe Manufac., master, employing one boy". (Data for Henry: *UK Census Records* 1871, Gillingham ED 47, p30 and data for John: *UK Census Records* 1871, W. Ashford, ED 9, p15).

1881 By now Henry was living at 91 New Street in Ashford with his grandfather, and his grandmother, Mary, born in Derbyshire. John was still described as a master pipemaker. Henry was described as a journeyman pipemaker. It seems reasonable to suppose that Henry had served an apprenticeship with his grandfather. This would indicate the beneficial strength of kinship as a structure. (*UK Census Records* 1881, W. Ashford, ED 7, p14).

Meanwhile Henry's parents had spent some time in Scotland (where his brother Robert had been born); the family then

moved to Ashford where his sister Mary and brother Arthur were born (*UK Census Records* 1881, W. Ashford ED 6, p39).

1891 Henry had moved to Varley Street, Newton, Manchester where he was employed as a clay tobacco pipe maker. He was married to Ellen who came from Hatfield, Hertfordshire. Their daughter was born in Manchester. Newton had become a densely populated area that was incorporated into the City of Manchester in 1890. At a time when the market for clay tobacco pipes was declining, possibly Henry and Ellen were responding to the confining structure of limited employment prospects in Ashford. Although Ashford's population reached 9,693 in 1881, Sidney East, George Penny and John Phillips (no close relation) were already established pipe-makers in the town (Page, William. 1908. *Victoria County History of Kent*, 3, 363). The move to Manchester shows that members of this family were prepared to remove over some distance, to live in places where they appear to have no family members (*UK Census Records* 1891, Newton, ED 19, p40).

1901. Henry is now shown as a tobacco pipe maker who is an employer. The family had returned to 91 New Street, Ashford, and were living next door to Henry's parents, Henry and Elizabeth, and Henry's brother John, who, aged 20, is described as a clay pipe maker. In all probability, he worked for his brother (*UK Census Records* 1901, W. Ashford ED 8, p7).

1903. Henry is shown as a tobacco pipe maker still living at 91 New Street Ashford, one of only six listed as active in the county (*Kelly's Directory of Kent* 1903, p1054).

1911. Henry was described as a "pipe manufacturer, clay", working, but on his own account (i.e. neither an employer nor an employee). He was living in Sturges Road, Ashford, and is described as

working at home (*UK Census Records* 1911, W. Ashford, Registration District 55, Sub district 2, ED 1, Schedule 101).

1913 Henry was still living in Sturges Road, and was one of only four pipemakers active in Kent. (*Kelly's Directory of Kent* 1913, p1188).

Other workers clearly had more than one job at different times and the written records can indicate this. The biography below is for Hatton Brown. It reveals uncertainties in the memory of the people providing evidence, mistakes in the recording made by the original enumerator and errors in census data introduced in the digitisation process by the Church of Jesus Christ of the Latter-Day Saints. The titles of the employments can vary with the sources used.

The biography for Hatton Brown shows some of the difficulties in using nineteenth century documentary evidence. It also reveals active agency in this pipe maker diversifying his sources of income as the pipe trade contracted.

Biography for HATTON BROWN

1829 Hatton Brown was born in Faversham to Parker and Suzanna Brown. Parker Brown, born 1796 within Kent, is recorded as a hairdresser. His wife Suzanna, born 1806, had no recorded employment. (*UK Census Records* 1841, Faversham, p22)

1841 By this time, Hatton had four younger siblings. The family were living in the Faversham Union Institution, a Workhouse (*UK Census Records* 1841, Faversham, p22).

1851 Hatton Brown's father was dead by this date. The family lived in Ospringe Street, Faversham, next to an uninhabited property; Hatton was living with his mother and with his younger siblings: Edward (a farm labourer), Jane, John and youngest brother George. Hatton is described as a "pipe maker". It is likely he had

served an apprenticeship with John Sheepwash. (*UK Census Records* 1841, Faversham, p13).

1853 Hatton Brown married John Sheepwash's second child, Evelina. The marriage took place in Hackney (Evelina's address was at Cowper Street, Shoreditch. Hatton's address of 'City Terrace' now means little, but probably was in Shoreditch). Both Hatton Brown and John Sheepwash were recorded as pipemakers *(London Metropolitan Archives, St. Mark, Shoreditch, Register of Marriages* P91/MRK, Item 007, p123).

1855 The absence of the family from the Post Office Directory for Kent of 1855 suggests they might have continued to live in Hackney. However, by 1858, he is shown as a tobacco pipe manufacturer living at Limekiln Street, Dover (*Melville's Directory of Kent* 1858, p184).

1861 Recorded by the census enumerator as 'Hutton Browne' (*sic*), he employed one man and two boys in his trade as a tobacco pipe manufacturer. Hatton and Evelina Brown had four children at this time. The household also accommodated a mariner as a boarder (*UK Census Records* 1861, Dover, ED 9, p19).

1871 Hatton Brown is recorded as a pipemaker employing two boys. His eldest son had started work as a railway servant (clerk). There were six further children listed as living at home at 79 Limekiln Street. The year of birth for both Hatton and Evelina is given as 1831 (*UK Census Records* 1871, Dover, ED 9, p20). There is a transcription error made by the Mormon Church as Hatton is shown correctly in the original record but transcribed as Halton in the digital record.

1881 Both Hatton and Evelina were recorded: Hatton as a pipemaker, Evelina as a pipemaker's wife (and so, probably, a pipe

trimmer). A daughter, Ada, aged sixteen, is shown as a pipemaker's assistant. They lived in a shop at 109 Snargate Street, Dover (it is not clear whether this suggests a workshop or a retail outlet or both). Snargate Street is a continuation of Limekiln Street (*UK Census Records* 1881, Dover, ED 7 p10).

1882 Kelly's Directory lists Hatton Brown as a tobacco pipe maker and Secretary to the Licensed Victuallers' Protection Society and collector of coal dues. It seems reasonable to assume that Hatton had some experience in the licensed trade before holding the Secretaryship of this Society. It does suggest some continuing relationship between the licensed trade and the clay tobacco pipe industry. Possibly Hatton was making pipes on his own while he was employed in the other capacities. (*Kelly's Directory of Kent* 1882, p175).

1891 Hatton is no longer an employer but is listed in the Census Records as employed. He is a "collector (presumably of coal dues) and a pipe maker". Evelina is not shown as working. Their son John was living with them, working as a carpenter. The family lived at 63 Dour Street, Dover, which is in the same area as Snargate Street, but further inland. Again the enumerator correctly recorded Hatton's Christian name but in digitisation it became Halton (*UK Census Records* 1891, Dover, ED 7, p15).

1901 Hatton is now working at home in Dour Street on his own account (and so not an employer or employee) as a collector of coal dues and as a tobacco pipe dealer. He is shown as still married but there is no mention of Evelina in the Census Records. Although there appears no record of her death, it might be supposed that she died about this time. The transcription error of 1871 and 1891 is repeated with Hatton shown as Halton (*UK Census Records* 1901, Dover, ED 6, p16).

1903 Hatton Brown is listed in Kelly's Directory as a resident of 300 London Road, Dover, but is not shown under the trade of tobacco pipemakers (*Kelly's Directory of Kent* 1903, p721 and 1054).

1905 The Dover Express and East Kent News for 13 January 1905 carried a story of Hatton Brown applying unsuccessfully for the licence of 'The Crown', London Road, Dover (Skelton, undated). This reflects his continued interest in the licensed trade.

Figure 3. The Crown Public House, Dover
Photograph from Kent Public House Archive (Skelton, undated)

This picture is of The Crown public house, London Road, Dover in 1904; Hatton Brown could be one of the men pictured. Phoenix was the name of a Dover brewery. The number of barrels in front of The Crown and the quantity of crates to one side (probably for carrying bottled beer) provides some evidence of the significance public houses such as The Crown had in the lives of working people at the start of the twentieth century. NB. in this photograph all the men wear caps but none smokes a clay pipe.

Kathleen Bragdon notes the link between a quantity of clay pipe and glassware debris found at a single excavation as likely evidence for a site once having been an inn (Bragdon 1988, 85). Hatton Brown's employment history similarly demonstrates this on-going link between drinking and clay pipe smoking.

1910. The *England and Wales National Probate Calendar* for 1858-1966, p249, records Hatton's death on 24 March 1910, with Probate granted to his sons George (by now a locomotive engineer) and John Sheepwash Brown. The value of his estate was £147.18. 00.

The location of Kentish documentary sources varies. Most original material (often on microfiche or held in digitalised form) is available at the Kent History and Library Centre (Maidstone) and/or at The National Archives (Kew). Other Centres hold smaller quantities of documentary evidence. In addition to the original formats, at various times, mainly in the twentieth century, some researchers have abstracted details of pipe workers. These typed, photocopied, published or handwritten datasets have been put together at different times and by several people. Frequently the original sources are not recorded. Such data are often found stored in the depositories of local museums. Sometimes it is possible to test items from the records where the original source has been lost or is not easily discernible. For example, a typed list of pipemakers claiming to be extracted from a Poll held in Maidstone in 1727 was held in the store of Maidstone Museum. It included a reference to a Thomas Swinyard, then working in Maidstone. Neither the typist nor the date when the copy was created is known. A family history researcher, Sheila Jelley, with whom I had earlier contact about pipemakers in her family, was interested in Thomas Swinyard (see Chapter Six, *Figure 16*, page 169). Jelley tracked down a digitised version of the appropriate Poll Book and confirmed the accuracy of at least one entry on the typed list (Jelley 2012, pers. comm.). With all secondary records, the practice used in this research has been to accept the documents at face value unless other evidence suggests this to be unwise.

It has been possible to make contact with several families who had pipemaker antecedents. In addition to Sheila Jelley, these have included: John Spain about the Spain family whose pipemakers were active in Sandwich and in Deal in the nineteenth century (Spain 2011, pers. comm.); Maureen Rawson on the Green family of Maidstone who were pipemakers active in the eighteenth century (Rawson 2011, pers. comm.); Vicky Gunnell on Michael Martin of Woolwich, active in the mid nineteenth century (Gunnell 2011, pers. comm.); and Pauline Kennedy on William Lawrence of Faversham, working in the late seventeenth century (Kennedy 2011, pers. comm.). These contacts have been achieved through liaison with family history societies. Although the work of many family researchers has little value beyond the individuals of their focus, some have uncovered material which has a wider relevance to the clay pipe industry of Kent.

Another source of documentary evidence occurs where pipemakers have produced their own contemporary biographies or where their immediate descendants have written the records. Details of four pipemaking families have been provided in this way. These are infrequent finds largely uncovered by chance, but nonetheless provide some background information to support and at times challenge information about pipemaking provided from more routine investigations.

The pipemaker-poet John Frederick Bryant published his own verses and record of his life in 1787. He worked in Bristol and in Woolwich, Kent. His account mentions a Mr Richards who employed him as a clay tobacco pipemaker in Woolwich. Both Richards and Bryant originated in Bristol and both seem to have made the journey between London and Bristol several times (Bryant, 1787, also recorded on a CD by Roger Price, 2012, pers. comm.).

William Luckett (1865-1945), from Plumstead, Kent, was a pipemaker; he is recorded by his grandson John McLean in a Society for Clay Pipe Research *Newsletter* (McLean 2007, 28-29). This brief account indicates that public houses were still an important outlet for clay pipes at the very end of the time

when clay pipes had any significant popularity. It shows the continued contact between the licensed trade and pipe makers. However, the grandson's account may well rely on distant and uncertain childhood memories for he states that he writes only "as far as (he) can recall and (he) apologise(s) for (his) lack of memory". Some of McLean's descriptions appear unreliable. For example, the account of an open furnace with pipes lowered into it in a bucket. This matches no other record for nineteenth or twentieth century clay pipe making and would be very unlikely to create marketable, clean pipes, fit for purpose.

Other accounts of pipemakers exist, but without an established link to Kent. Henry Burstow's father, William, born 1781, was a pipemaker in Horsham, Sussex, in the first half of the nineteenth century. Horsham is less than twenty miles from the Kent/Sussex border. The family surname of Burstow (and in similar forms such as Burslow) is common amongst pipemakers, especially in Greenwich, Kent, around the time when Henry Burstow was alive. Given the proximity of the two towns, it is likely, but not proved, that the Burstows of Horsham and of Greenwich were related. Henry Burstow's account given in his *Reminiscences*, written in the first half of the nineteenth century but published much later, is particularly useful in its description of living conditions in Horsham, for its list of local occupations from 1830, and for its record of the road conditions and the effects of the introduction of the railways in the 1830s and 1840s (Burstow, 1911).

Another pipemaker's son, John Spencer Watkinson, wrote about his father from Market Rasen, Lincolnshire. This account was brought together by Allan Peacey in 1996 as the "*Watkinson 'Journal'* " (Peacey, 1996b) and subsequently by Watkinson's great granddaughter (Erica Gillian Housley, 2000). The narratives provide some insights into the marketing and distribution of completed pipes and suggest how and why the trade contracted from the middle of the nineteenth century. While not relating to Kent, it does reveal some of the thinking of pipemakers contemporary with those in Kent.

A final area of documentary material is the novel in English literature and, if the term ‘document’ is stretched somewhat, also in works of art. Secondary sources such as these can help identify social trends and provide some relevant detail about how the pipes were seen and used by their owners. The value of pipes in literature has been considered elsewhere (Boyden 2009, 7-14). Fiction written at the time can suggest an active role for pipes as they interact with their owners (see ‘The Materiality of Pipes’, page 30 below). Henry Fielding in *Joseph Andrews* (1742, chapter 16) provides an example of this when writing of one character’s dejection, disappointment and perplexity. He writes of “poor Adams (who) immediately applied to his pipe, his constant friend and comfort in his afflictions; and leaning over the rails, he devoted himself to meditation, assisted by the inspiring fumes of tobacco”. Similarly, but this time at least partially set in Kent, Charles Dickens in *David Copperfield* (1850) writes that “Mr Barkis philosophically smoked his pipe” (chapter 10, my underlining) while others are shown to use their pipes physically to reinforce an argument (for example, “For, don’t you see,” said Mr. Omer, touching me with his pipe....” (Chapter 30).

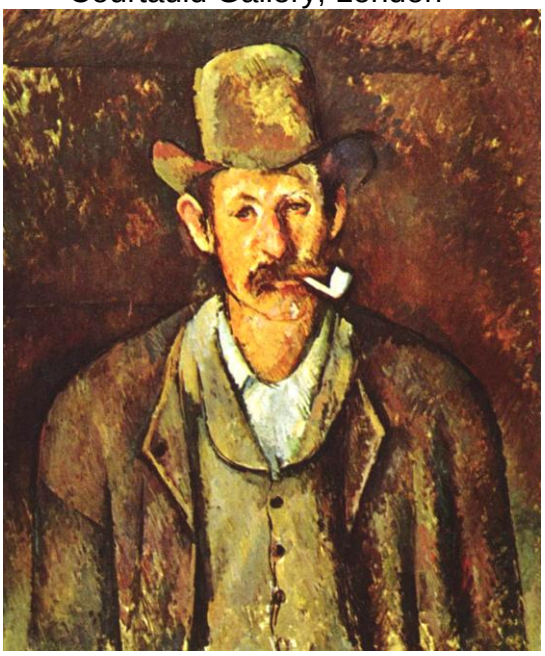
Art too can demonstrate something of the usage of pipes. While there are a number of works of art, including photography, that show people smoking, the use of pipes is not the prime subject of this research and so no attempt has been made to search for illustrations from Kent. There are two examples of artwork that indicate how the kind of pipe used might relate to the situation of use. Of William Hogarth’s 1754 set of four paintings with the theme of electoral corruption, one shows two apparently inebriated electors having experienced “*Canvassing for Votes*” (the painting’s title) at an inn. They are smoking pipes with quite lengthy stems (probably suggesting a leisure situation). On their table are pieces of broken pipe stem which the *Hogarth Exhibition Catalogue* at Tate Britain (Hallet and Riding 2006, 229) suggests are being used in a discussion about the naval battle of Portobello (fought in 1739). Other paintings and etchings represent men and women of various social classes and in working and recreational situations; one such late painting is *Man with a Pipe* (Paul Cezanne *c*. 1892). Although the artist and subject are French, the man’s clothing is not dissimilar to that worn by the

Kentish working men in the photograph of The Crown. The use of a short (cutty style) pipe would be appropriate for smoking at work.

Figure 4: Detail from "Canvassing for Votes" William Hogarth 1754
Sir John Soane's Museum, London

http://commons.wikimedia.org/wiki/File:William_Hogarth_032.jpg

Figure 5: "Man with a Pipe" Paul Cezanne 1892
Courtauld Gallery, London



http://www.impressionistsgallery.co.uk/artists/Cezanne/1890-1905%20(1).html
and *http://www.wikipaintings.org/en/paul-cezanne/man-with-a-pipe-1892*

Artefactual Sources

The remains of pipes are ubiquitous and familiar to all field archaeologists. The most useful elements of them are the pipe bowls; this thesis will make repeated references to their typology. It is important, therefore, to devote a significant part of this chapter to a consideration of pipe bowl typologies.

Pipe debris may be a very frequent 'find' on an archaeological site, at least in the upper contexts. However, few excavations set out with the prime motive of making pipe-related discoveries. Most of the pipe debris consists of pipe bowls and stems. Less often, other items made of pipe clay are uncovered, for example, hair curlers. Although hair curlers have been found in Kent sites, as at Periwinkle Water Mill, Milton Regis (Baxter, 1990), surprisingly only three had been preserved in the finds studied for this research. Other items may exist but are unrecorded (e.g. children's dolls and cleaning stones). Very rarely the remains of kilns are found. Kilns need not be large and if the description of Luckett's 'furnace' given by McLean (2007, 29) is anything like accurate, many would be relatively easy to dismantle with little subsequent evidence for their existence. The remains of kilns have been found in Sandwich and in Canterbury at St Gregory's Priory and at Northgate. Other evidence strongly suggests where kilns had been in existence, for example, the presence of waster pipe bowls deformed before firing (as at the Dover Sewers site and at the Canterbury site of St George's Clocktower). Sometimes the evidence is more speculative and is based on the concentration of finds (as with the quantity of Atkinson and Oswald type 28 pipes marked HH [probably made by Henry Hunt] from Fremlin Walk in Maidstone).

The data collection sheet for pipe related artefacts used in this research is shown with specimen data as *Table 1*, page 227. This is a development of the recording sheet put forward by Higgins and Davey in 2004 (in White 2004, 487-490). The data held in this form was collected early in the research before the theoretical perspective and industrial focus of this research had been refined. Having considered some of the minutiae of pipes (bore diameter and

milling and burnishing, for example) much of this contributed little to the final structure of the thesis and has not been used here.

Without exception, organisations and individuals have proved very willing to make their collections available for inspection. The main sources of pipe-related artefacts studied in this research are listed here:

- The Canterbury Archaeological Trust (CAT) has a very significant number of pipes from many sites in Kent. The ceramics studied for Chapter Six also came from the CAT.
- Museum of London Archaeology (MOLA) houses pipes coming from within and beyond Kent. Some of their pipes are held by the London Archaeological Archive and Research Centre (LAARC).
- Pre-Construct Archaeology (PCA) is a commercial body undertaking research over a wide area – it too holds many Kent pipes.
- The Maidstone Museum and the Greenwich Heritage Centre hold a good number of pipes but many smaller museums have few.
- A number of Archaeological Societies have some pipes: these include the Orpington and District Archaeological Society and Bexley Archaeological Group; however, they only hold a limited number of pipes and this seems true of most local societies. An exception is the Dover Archaeological Group (DAG) with a substantial holding of pipes and some kiln material from Sandwich.
- Individuals with private collections of pipes have been willing to submit their pipes to examination, especially Peter Hammond and Phil Cole. Frequently items in their collections are of uncertain origin, as are many items in museum collections where donors offering pipes were unable to locate the sources of their finds with precision.

The Materiality of Pipes

Before looking at the pipes themselves, it is appropriate to consider briefly the materiality of pipes. Clay pipes in Kent and elsewhere were literally in a close relationship with people – especially with their makers and users, as the literary extracts, above, suggest. There are at least three questions of

significance here: what were the messages carried by pipes; how were the messages imparted and received, and how does this activity interact with the wider social scene? These questions suggest that pipes had agency, of human origin and interpretation certainly; it does not necessarily imply that they were the sole agents of change, but to a greater or lesser extent they were change agents. In line with structuration theory, it should be expected that these agents should be capable of change themselves and be seen in different ways at different times over the 300 years in which pipe smoking was a significant activity. While questions raised in this paragraph will not be answered in the manner of a catechism on every page of this thesis, they will permeate and influence what is written. At times the focus may be more on people or more on material culture, but, perhaps especially in post-medieval archaeology, it is difficult to separate one from the other. This is fittingly expressed by Christopher Witmore in the Archaeolog blog (23 February 2006) where he writes of "the entanglement of humans and things".

This relationship may be analysed further with Actor Network Theory (ANT). It can be argued that artefacts may be imbued with power and be actors as much as are people. Gardner notes that the relationship between people and things creates "networks of actors rather than siting agency in individual entities" (Gardner 2004b, 8). Mytum explores three differing levels of agency that items may hold (Mytum 2013, 55). The locus of agency is diffuse but Gardner provides an appropriate reminder of the importance of human involvement when he says that agency is "a relational concept, rather than the property of individuals...but it also depends on human beings as being part of the relationship" (Gardner 2004b, 10).

If there is a two-way pattern of agency involving both people and artefacts, it will be important to explore in some detail what 'types' or 'styles' mean for clay tobacco pipes. The remainder of this chapter focuses on the typology of pipes. It traces the identification of one key part of the "kit" used in this research (Dobres and Robb 2005, 160). It explores something of the theory of typologies and applies this to clay tobacco pipes and, in particular, to the typology of clay pipes used in this thesis.

A Note on the Theoretical Background to Pipe Typologies

The focus of this thesis is the people who worked in the clay tobacco pipe industry in Kent. Nonetheless, at times, in order to understand their purpose, agency and achievements it will be necessary to refer in some detail to the artefacts they created. On occasion, references to pipes will be couched in terms of their conformity to, or variance from, a particular type. There are many advantages in referring to typologies of Kent pipes. A typology provides a shorthand to facilitate comparisons between sites. In addition, typologies may help in the comprehension of human activities such as trade routes, the passage of ideas and of peoples, and changes in social situations. Clay pipe typologies, based on frequent changes in the shape of pipe bowls, have a particular strength in the dating of contexts and sites.

However, creating a typology is not necessarily an easy task. Doran and Hodson offer a suitable warning when they see this as a "superficially straightforward task (which) has proved one of the most consuming and contentious aspects of archaeological research" (Doran and Hodson 1975, 158). While a detailed study of the theoretical background to the creation of pipe typologies is not appropriate here, some significant factors need to be considered before making use of pipe typologies.

Aldenderfer shows the importance of making a systematic arrangement of material culture if it is to be a tool for further analysis (Aldenderfer 2010, lines 1 and 2). Whoever creates a typology reveals an element of their fundamental approach in that they are either splitters – emphasising differences between artefacts – or lumpers – emphasising similarity (Adams and Adams 2008, 280). Pipes are rich in the variety of characteristics that might be used to create a typology, but while emphasis on a great number of attributes might broaden the potential relevance of a typology (argued by Binford 1963, 195) the resulting proliferation of types can also limit ease of use and of comprehension (argued by Clay 1976, 305). Arguably, Davey and Rutter's work on Chester pipes falls in to the trap of excessive splitting. Just for that city, and only from 1630 to 1840, they list and illustrate 107 separate types of pipe as a "bowl form typology" (Davey and Rutter 1980, 214 – 223).

An allied issue is the extent to which variation is permitted in a type before another type must be identified. It is tempting, but fundamentally limiting, to see each fresh piece of artefact-based research or interpretation create a new typology which matches exactly only the artefacts under study. Wheat, Gifford and Walsey (1958, 34) argue with regard to pottery that “to depart from or redefine the (typology) would be to scrap all previous ceramic classification..... This is neither desirable nor necessary as it is (the) aim to build on the foundation established by...others”. Hill and Evans (1972, 238) tend to support this position when they favour a “type – variety system” and claim many other writers in support of this approach.

This thesis will not argue that typologies cannot evolve. Hill and Evans (1972, 237) write of types which can become ‘canonised’ and fossilised. Such an approach would deny the value of subsequent research.

In this study of the workers in the Kent clay pipe industry, use will be made of a type-variation approach; however, it will also indicate where further research may make a case for modification of the established typologies.

Kentish Pipe Typologies.

A number of pipe typologies have been set out which have met varying degrees of acceptance. Some have been dominated not by the pipes but by the dates of the pipes. Harley, for example, presents a classification of a “typical evolutionary series in half century steps” (Harley 1963, 21). Such rigidity underemphasises the importance of changes in the artefacts themselves.

Sometimes groups or individuals create their own analyses of clay pipes, perhaps reflecting the size of an assemblage. Certainly, faced with some 1700 pipe bowls from Sandwich, the volunteers in the Dover Archaeological Group (DAG) created some 30 ‘types’ of bowls found at Potter Street, Sandwich, Kent (Richard Hoskins 2009, pers. comm.). This is one of the few kiln sites identified in Kent; it was used by the Kipps family in the late eighteenth and early nineteenth centuries. The Group’s typology was

doubtless useful in helping members develop some understanding of the bowls studied. Their work focused on features such as the spurs, the makers' initials and bowl diameters and depths. The most unfortunate factor in this thorough piece of work is that it is unique. The DAG's work cannot be applied to pipes that lack the characteristics they indentified. It cannot be applied to pipes sourced elsewhere.

There are currently only two typologies of pipe bowls that command wide acceptance; these are the typologies produced by Atkinson and Oswald in 1969 and by Oswald in 1975. Both focus on London types. In this thesis, bowls from the Atkinson and Oswald typology are shown as 'AO' followed by the type number. Pipes from the Oswald typology are referred to as 'Os' with the type number.

Oswald first published a typology in 1951 (Oswald 1960, 51). He developed this into a new typology in 1960 and then, following attention to the Atkinson Collection of pipes together with those held in the London Guildhall Museum and those from dated archaeological groups, he with David Atkinson put forward a typology of 33 types of pipe (Atkinson and Oswald 1969, 177-180). This appeared in the *Journal of the British Archaeological Association* and so had wide circulation. In addition to the drawings, provided by Atkinson, there were a few additional notes for most types. The majority of specialists in the evolution of clay tobacco pipes would see this typology as the most important and most reliable in circulation today. The article in which the typology is presented is wide ranging, and added to the list of known London makers which Oswald had presented in 1960.

In 1975, Oswald produced his British Archaeological Report: '*Clay Pipes for the Archaeologist'*. This volume is an essential guide to clay pipes. It provided a list of makers covering much of the country and included a new 'Simplified General Typology' of 30 shapes, again with some additional written descriptions. It might be argued that the outline drawings, provided by Oswald on this occasion, lacked some of the certainty and precision of Atkinson's earlier illustrations (in Atkinson and Oswald, 1969). Nonetheless, many would

claim that Oswald's typology does fill some gaps in the earlier typology prepared by Atkinson and Oswald. In a report written by Chris Jarrett for Pre-Construct Archaeology Ltd., Jarrett notes that the pipes from the Gravesend and North Kent Hospital site are "classified according to Atkinson and Oswald's (1969) typology .... while the eighteenth century examples are redefined according to Oswald's (1975) general typology" (Jarrett 2004, unpaged). Jarrett uses similar phrases in writing about a number of other pipe assemblages from such sites as Seagar's Distillery in Deptford, The Bell, Sittingbourne, Kent, and 117 High Street, Rainham, Kent (Jarrett 2000, 2002a and 2002b, respectively, all unpaged). Jacqui Pearce, writing reports for the Museum of London Specialist Services, has shown a similar need to amend the 1969 typology to create a type that is midway between Atkinson and Oswald's types 27 and 28 (Pearce 2007, paragraph 1). Writing on pipes from an Uxbridge Inn clearance in 2000, Pearce refers to both Oswald's 1975 and Atkinson and Oswald's 1969 typologies (Pearce 2000, 167).

A Typology for this Research

When the Atkinson and Oswald (1969) and the Oswald (1975) typologies are compared, it is clear that eleven of the pipes shown in the two typologies are identical. Unfortunately, in the drawings of the typologies, Atkinson and Oswald have the stems pointing right while the Oswald drawings have the stems to the left. The integration and interpretation of the typologies is made more difficult because Oswald's 1975 drawings numbered first the pipes with heels, then pipes with spurs and finally those with neither spurs nor heels. The 1969 drawings, however, more helpfully focus on the totality of the bowl shape rather than any development on the bowl base and use a broadly chronological numbering. Happily, the pipe illustrations in both typologies use a scale of 1:1. Careful copying and overlaying of the bowl outlines reveals which pipes are common to both typologies and which are unique to one. I reassembled the two sets of drawings, giving preference to the clearer Atkinson drawings in the cases of pipes which were identical. The pipes were displayed in date order, with the stems facing in the same direction. The result was a potential typology of 52 pipes – a number bordering on the unworkable but nonetheless used in the initial research for this study.

Records were made of 3766 bowls where the type may be identified; a further 328 bowls were studied but found so damaged as to prevent secure type identification. Another 33 pipe-related items were examined but rejected from this study. These included items of kiln furniture, hair curlers, unsourced pipes and several pipes excavated in places beyond the 1889 boundary of Kent. The Kent pipe bowls were taken from 90 locations across the county. Almost all pipes seen in Kent can be matched with the types in this composite typology; however, some show a degree of variation from the 'pure' form. The implications of this are considered in subsequent chapters, especially Chapter Six. Where variations were found, the pipe bowls retained the shape for their type but, for example, were taller in height. The impact of variations became important in writing this thesis as variations from type norms could suggest a degree of agency on the part of smokers or pipe makers or mould makers (discussed in Chapter Six, pages 158-159).

It was necessary to confirm that different bowl types and the variations within any type represented differences in bowl capacity. Simply using the illustrated outlines of pipes might conceal differences in the thickness of the clay in the bowl walls which would mean that the outline shapes were not a reasonable indication of bowl capacity. Accordingly, measures were made of the cubic capacity of examples of bowl types which matched the drawn examples and set against the cubic capacity of some variant bowls. The method for conducting this investigation was to seal the bore hole at the bowl base with a temporary smooth sealant; the bowl was then filled with fine dry sand to the brim of the bowl and the volume assessed by pouring the sand into a measuring cylinder. The fundamental assumption made was that, in use, all pipe bowls were filled with tobacco up to the bowl lip. The records for pipe bowl capacities measured in this way are shown in Chapter Six where reservations about the assumption made here are discussed.

In creating the record of Kent clay tobacco pipes, no examples were found for a few types while others had very few representatives. Individual or unusual pipes may have local significance (for example, possibly indicating a pipe has been moved from its area of production), but in terms of a useable typology

which might be applied to the whole county, it seems reasonable to ignore those pipes that are not found or which appear very infrequently. For example, pipe type numbered 1 in both lists was made very early in the history of pipemaking – Atkinson and Oswald say before 1610; Oswald suggests before 1600. Of the 3766 bowls for which types could be identified, none were recorded as AO1, so it seems entirely acceptable to exclude this pipe. Similarly, it is difficult to justify retaining in a typology a pipe shape identified on fewer than approximately one occasion in a thousand pipes inspected across Kent. The potential for observer error or for the pipes to have originated outside the county seem more likely causes for the discovery of such clay pipes than does local manufacture. If this figure of fewer than one in one thousand pipes is accepted, pipes recorded on four or fewer occasions can be ignored in the record of Kent pipes completed for this research. The total number of pipes that are ignored is 37 (marginally under 1% of the 3766 typed pipes). It is reasonable to remove these types and so create a typology that is more workable. In all, twenty-two types can be removed from the list originating from the combination of the AO and Os typologies. This reduced typology has a more manageable number of thirty types represented by 3729 pipes. The details of the dates and numbers recorded for all 52 pipe types studied for this thesis are shown as *Table 2* (A Suggested Typology Reflecting the Pipes), page 229. The refined list of thirty types used in this thesis are drawn as *Figure 6* (An Illustrated Typology of Kent Clay Tobacco Pipes), page 230.

It is arguable that drawing inaccuracies could be a factor in these inclusions and exclusions. An even wider study conceivably could advance the cause of further changes to the proposed combined list, but, at this time from the material studied, the reduced list of thirty types seems efficient and effective. With the current data available, this establishes a Kent typology that is broadly similar to a London typology.

The combined list is a secure base for typing pipes in Kent: 3421 bowls fit Atkinson and Oswald's typology, leaving an additional 345 which match Oswald's typology. As Jarrett suggested, it is with the eighteenth century

pipes that greatest reference needs to be made to Oswald's typology. Pearce seeks a division between Atkinson and Oswald's types 27 and 28 – broadly 1780-1820 and so covering a time towards the end of that referred to by Jarrett. Elke Raeman, a Finds Specialist for Archaeology South-East, while accepting the case for some modification of the Atkinson and Oswald typology, wisely notes that the wider introduction of sub-types "need(s) to be well-published so that everyone follows (them) rather than create their own" (Raeman 2013, pers. comm.).

Some might argue that it would be sensible to rework the pipe bowl typology for Kent from first principles and to confirm dates of the pipes through the dating of associated finds. With the relatively minor reservations shown here, the two preferred typologies have proved competent in terms of establishing the succession of pipe bowls in Kent. Many archaeologists have found them accurate when presenting a chronology of contexts. Atkinson and Oswald's typology, and to a lesser extent Oswald's typology, have been widely used in archaeological reports. On balance, it would be an unwise and largely unnecessary act to argue for their replacement. It seems more likely to seed confusion than to reveal fresh insights. This accords with the opinions of Wheat, Gifford and Walsey (1958, 34), quoted above.

Conclusion.

This chapter has explored the Methodology adopted and developed for the thesis. In so doing, it has touched upon some of the aspects of the Kent clay tobacco pipe industry that will be revisited at greater length in later chapters. It has given prominence to the works of Adrian Oswald and David Atkinson. It is now appropriate to review more examples of writing relevant to the industry and to see how this thesis complements such work.

CHAPTER THREE – HISTORIOGRAPHY

Introduction

This chapter will consider the place of historical archaeology in the broad spectrum of archaeology and show where the study of the clay tobacco pipes lies within historical archaeology. It will then contrast two approaches to the ways in which finds of clay tobacco pipes have been treated. Much of the chapter is devoted to an exploration and analysis of the differing approaches to pipes provided in the literature. The chapter will indicate how this thesis takes an innovative approach to the clay tobacco pipe industry using Kent as its principal county for study.

The Focus and Place of Historical Archaeology.

The youthfulness of historical archaeology as a field of study is clear from the fact that the American Society for Historical Archaeology (SHA) and the British Society for Post-Medieval Archaeology (SPMA) have both been established for around fifty years. While historical archaeology is a relatively new discipline, it uses much older thinking to guide and strengthen its considerations. One particularly important example is the insights a study of the effects of capitalism can bring, especially when looking at its emergence and evolution within the culture of post-medieval England. Charles Orser named capitalism as one of his four fundamental processes underpinning historical archaeology (discussed further in Chapter 4, page 69). Mark Leone, one of the first to see the importance of capitalism for archaeologists, has written extensively, especially on the archaeology of capitalism in Maryland. More recently, Stephen Mrozowski writes of the biological and cultural dimensions of events that have shaped the modern world (Mrozowski 2006, 24) and notes, for example, the effects of drought on the degree of violence between Native Americans and the colonialists. Others have adopted a similar approach and have made clear the political stance they advocate. Christopher Matthews shows why “archaeology as practice and symbol must be the central subject of critical thinking by Marxist archaeologists” (2005, 26). Another example is provided by LouAnn Wurst and Stephen Mrozowski who begin their abstract to a recent article by saying that “archaeologists have largely embraced the idea that our discipline is political; that from its inception

it has been intimately linked to capitalism and implicated with nationalist, colonialist, imperialist, sexist and racist agendas" (Wurst and Mrozowski 2014, 210). They see the potential for insights gleaned from studies of the past to influence what we shall experience in the future (Wurst and Mrozowski 2014, 221). While this thesis does not adopt such a strong political framework (this is considered further in Chapter 4, page 68), it does acknowledge the importance of drawing together the past and the present. It uses a technique commended by Wurst and Mrozowski (2014, 211) who write that "historical case studies and contexts....contribute to a better understanding of the long-term economic, social and environmental crises facing contemporary neoliberal capitalism".

The analogous titles of the SHA and the SPMA mask a difference in the approach to a similar field of archaeology taken in USA and UK. The American tradition has been more anthropological in orientation. Evidence of this can be seen in the Internet descriptors provided by the Society for American Archaeology (SAA) which amongst its 'Essential Concepts' sees Archaeology "is a subdiscipline of anthropology" while the SHA, in its opening page on the Internet, describes historical archaeology as a "subfield of archaeology". In essence, the practice of American archaeologists in SAA has placed an emphasis on who the ancient people were. In Britain, the SPMA has placed greater weight on what the humans did; that is, on their history. Paul Courtney acknowledges that in recent years the "intellectual differences between disciplines and continents" has been "blunted" although he notes there remain "key differences between approaches" which need "understanding". He explains the changes in approach in terms of "the adoption of anthropological theory by social and cultural historians on both sides of the Atlantic and the worldwide spread of anti-empirical perspectives of postmodernism" (Courtney 2009, 180). This thesis reflects the more united approach by taking the theoretical standpoint of structuration and by looking at the pipemakers being active in their culture. Structuration brings together the work of Pierre Bourdieu (a French anthropologist) and Anthony Giddens (a British sociologist). Adopting this theoretical position is new for the clay tobacco pipe industry in the UK and is explained and justified in Chapter Four. In studying the Kentish clay tobacco pipe industry this research moves away

from the approach of the collector or antiquarian and does not see descriptive narrative as a sufficient endpoint.

The question must be asked about what distinguishes historical archaeology from other branches of the wider discipline. Hall and Silliman discuss this in the first chapter of *Historical Archaeology* (2006). They consider the physical locations that might be studied within the scope of historical archaeology; they review the potential dates that may establish the period studied; and they look to the use of writing as a characteristic that distinguishes societies appropriate for historical archaeological study (Hall and Silliman 2006, 1). One could spend many volumes in the sterile and pointless pursuit of definition and identity yet still fail to find agreements. They decide to settle for the statement that “dissent at the frontiers of knowledge creation is the symptom of a healthy field of enquiry” (Hall and Silliman 2006, 2). An element of fluidity seems appropriate in a field of study that can spread both into archaeology and into history and encompasses elements as diverse as the social and physical sciences. An historical archaeology enquiry has multiple dimensions which can include scale, agency, materiality, meaning and identity (Hall and Silliman 2006, 8-13). These are familiar elements in most archaeological endeavours and are certainly embraced in this thesis. Hicks and Beaudry make a forceful and appropriate commitment when they state their desire to “strongly resist any attempt to separate (historical archaeology) from the archaeology of earlier periods” (Hicks and Beaudry 2006, 2).

Some writers have suggested that one danger with a tightly defined branch of archaeological study is that it becomes isolated. As Gavin Lucas puts it, the focus can become “highly specific, localised narratives whose broader relevance is missing” (Lucas 2006, 39). Historical archaeology can become so immersed in the local that a link with any similar culture elsewhere is broken and it becomes impossible to find any general pattern, should one exist. Equally, however, historical archaeology can offer a much broader view. Charles E. Orser, Jr. coined the invitation to “dig locally, think globally”. Paul Courtney sees this as an “aphorism” (Courtney 2009, 180) and Angela Middleton as a “refrain” (Middleton 2008, 5): it was the phrase Orser used as his title to the final chapter of his *Historical Archaeology of the Modern World*

(Orser 1996, 183-204)). We might well agree with Julian Thomas (2000, 8) that “we should not allow our accounts of the past to become so parochial that they are unable to contest the large-scale histories and prehistories of conventional archaeology”. It seems wise to subscribe to an approach of flexibility and to seek the global where this is feasible but to acknowledge the distinctive nature and effects of the local too. This will be reflected in this thesis which, at times, brings together the local study in Kent with broader trends across the country.

Two Written Approaches to Clay Pipes in Historical Archaeology

Historical archaeology is rich in other artefacts in addition to documents. The high quantity of many preserved objects is another significant feature of historical archaeology. Perhaps also it is the fact that mundane objects, some still in use, are more likely to be accessible to historical archaeologists than may exist so widely in other branches of archaeology. Similarly more artefacts, even whole properties, may be intact and complete, or more nearly so, than is likely to be available for other specialisms within archaeology.

These advantages for the historical archaeologist may make easier the opportunities for accurate dating and for the developments in forms to be tracked. For example, in studies of ceramics, fashions and technology, it is possible to be more certain about methods of manufacture. Artefacts can suggest trade routes and trading partners. They can be used to mark contacts between cultures and to permit more informed investigation into aspects of race, gender and class. It may be possible to consider how artefacts were used and how they were understood by the users; also it is possible to consider the message conveyed by the use of artefacts in social situations. One classic and wide-ranging example of the interpretative use of artefacts can be found in the writing of James Deetz and, in particular, in his “*In Small Things Forgotten*” (1977 and 1996). He writes of chairs and buildings, of chamber pots and tobacco pipes, of inventories and foodstuffs. Such items as these may not all be unique to historical archaeology, but the relative abundance of rich artefactual assemblages encourages vivid interpretations with perhaps greater confidence than is enjoyed by archaeologists of earlier periods.

When looking at artefacts, an historical archaeologist can focus unduly on a classification. Loren and Beaudry cite the “frequently reprinted” Noel Hume’s *Guide to Artefacts of Colonial America* as evidence of this (Loren and Beaudry 2006, 254). They also remind us of the “trap of linking artefacts to particular ethnic or gender groups” e.g. of sewing objects with women (Loren and Beaudry 2006, 256).

With these thoughts in mind, it is appropriate to review two fundamentally different approaches made in historical archaeology to clay tobacco pipes: one where the focus is almost exclusively centred on the pipes themselves; and the other where a wider relevance is sought.

1. Pipe Studies

Pipe remains are plentiful on many archaeological sites, but are quickly damaged prior to or after deposition. They are small enough to be collected easily and reasonably straightforward to clean. They can permit analysis but some archaeological investigations are focussed exclusively on the pipes alone. The object of the study is largely confined to the pipes themselves rather than looking for what the pipes could reveal about the societies in which they were made, traded, used and discarded. In these characteristics, pipe studies have much in common with the ways in which other artefacts have been studied principally for the items themselves. Examples include flint implements, dolls, brooches, glass jars and coins. One illustration will suffice: “*Roman Silver Coins: Volume 1 The Republic to Augustus*” originally by H. A. Seaby. The introduction to this book immediately makes clear that its focus is on the needs of collectors and it is stated that “there is little original research in this work” (Sear and Loosley 1978, iii). The book provides clear illustrations of Roman coins over 160 pages. For each coin there is a description, a date and a place of manufacture, but there is no attempt to move on to explore subtle differences between coins when the same or very similar subjects or persons are depicted. There is nothing about any movement of the coin between place of manufacture and where it was found. Clearly such works have a value in terms of identifying coins but there is no attempt to take the study further.

With clay tobacco pipe studies, researchers may concentrate on the mouldings shown on the bowl and stem. For example, see Atkinson's article on pipes carrying the Prince of Wales Motif (Atkinson, 1984). Decoration can suggest topics in which the pipe user has some interest. For example, they can show different sports, but they usually stop at the generic (e.g. showing football boots and ball) rather than identify a particular team or sports personality. Similarly pipes can indicate a political affiliation; pipes referring to Ireland are particularly common. One late nineteenth century example shows how decorated pipes show allegiances to the cause of Home Rule and demonstrates how ornamentation of some pipes conveys a less obvious reminder of the mid-century Great Famine (Alexander, 1985). Many pipes demonstrate membership of societies without revealing details of those societies to non-members. There are many Masonic pipes and pipes used by members of such bodies as the Royal Antediluvian Order of Buffalos which carry symbols only initiates would readily comprehend (White and Beaudry 2009, 220). Other pipes celebrate public anniversaries. Some pipes found in Kent celebrate royal occasions such as Queen Victoria's Golden Jubilee of 1887, while others rejoice in annual commemorations like the 'Happy Christmas' pipes made by William Luckett (1865 – 1945) in Plumstead, Kent. Another approach to pipe studies is to focus on pipes from a particular location or on those manufactured by a named pipemaker or on those with a particular theme (for example, André Leclaire's article on pipes decorated with laurel branches [Leclaire, 2007]).

In looking to take such studies further, a researcher might use finds bearing regimental emblems to trace the movements of troops across the country or it would be possible to explore the evolution in moulded decoration preferences over time. However, while artefacts studied by historical archaeologists may have the potential for further study, in many cases the useful activity within pipe studies tends to stop at cleaning, organising and displaying with the intention of creating as complete a collection as possible. One example of an article which demonstrates the limitations typical of 'pipe studies' considers pipes shown in paintings created in the Netherlands in the seventeenth century (Oswald, 1986). The article lists the paintings but provides merely brief descriptions of the pipes, although often suggesting appropriate dates.

There is only an occasional and very limited attempt to go further and consider such issues as the subjects of the paintings or any relevance of the dates when the pipes were made. Articles of this kind are useful in that they often bring together a body of knowledge and indicate areas worthy of further investigation.

However, the particular problem that arises with clay pipe studies of this kind is that it can be difficult to move forward to any further analysis. Quite often the provenance of the pipes is not known by the current owner of the pipes, be it a museum or private collector. The National Pipe Archive houses several substantial pipe collections, among them that of Peter Elkins, most of whose pipes came from London. In recognising this generous donation, David Higgins notes that Elkins had "acquired some pipes from other Mudlarks or exchanged duplicates with other collectors" (Higgins 2012b, 47); this means that there may be no secure known location for the source of part of his collection. This is also true for the majority of pipes given to and retained by the Greenwich Heritage Centre. What is certain about material culture such as pipes is that "an artefact with no provenance may be an art object or a curiosity, but it has lost most of its value as a source of archaeological information" (Pauls 2006, 65).

2. Clay Pipes in Historical Archaeology

The shape of pipe bowls has changed frequently throughout their history, while the technology required in the manufacture of pipes has not evolved significantly since the basic pattern of production became established in the late sixteenth century. Changes in bowl shape allow the date of pipe manufacture to be identified with some precision. Bowls frequently show makers' marks or initials which can add precision to dating and location of manufacture, particularly when used in association with documentary evidence. In historical archaeology, these features of pipes are often used to date excavation contexts. This is almost certainly the first and sometimes the only interpretative use of clay pipes in archaeological reports and investigations, as can be seen in an article reporting excavations at Rose Lane, Canterbury (Weekes 2012, especially p251-252). The material culture of pipes can be worked into a dated typology that has widespread potential

value in any archaeological site where post-medieval artefacts are encountered (see Chapter Two for a development of the values of pipe typologies in the archaeology of Kent).

David Higgins was one of the first to put into print a review of some of the other uses of clay pipes in archaeology beyond assisting with dating. He notes their value in "exploring the social status of a particular site or group"; "their potential in marking trade routes"; and their value as indicators of trade between peoples. He noted the potential of well preserved large assemblages for exploring workshop practices. (Higgins 1995, 47-52). Other writers, outside the UK, have looked to find wider interpretations from the analysis of assemblages of clay tobacco pipes. One example is the work of Georgina L. Fox, who studied the seventeenth century English pipes found at Port Royal, Jamaica (Fox, 2002). Fox looked at the link between tobacco production and the international trade in clay pipes and developed her arguments from a "standard paradigm of a core-peripheral relationship" (Fox 2002, 67). Peter Davey uses Fox's earlier publication (BAR International Series 809, 1999) to stress the need for care in ascribing sources to pipes. Fox sees Bristol as the major source of pipes found at Port Royal. While not questioning her argument for a core-periphery relationship, Davey does ask if the dominant source was indeed Bristol and provides some evidence of alternative locations within England (Davey 2009, 181-202).

Lise Loktu's unpublished MA thesis reports that "attention has almost exclusively been focused on clay pipes as functional artefacts with little attempt to examine them closely in their social contexts". Loktu is one of the first to present a study of clay pipes permeated with and informed by a theoretical perspective (Loktu, 2009). Her work was on social differentiation in seventeenth century pipe use in Trondheim; the perspective she adopted was Bourdieu's concept of *habitus*. Loktu's study is confined to three specific sites within Trondheim; my research is wider ranging geographically and encompasses a longer period of time, but it acknowledges a debt to the originality of Loktu's approach in linking research into clay tobacco pipes with a relevant theoretical perspective.

Cochran and Beaudry stress the importance of “foundational studies” (stressing identification, chronology and typology) before interpretation can begin. They note that “prior to the 1990s, interpretative analyses of ceramics and other artefacts were largely absent from historical archaeology in the UK, and in the Americas tended to focus on a narrow range of issues, namely consumer choice, status and ...ethnicity” (Cochran and Beaudry 2006, 193). Furthermore, they state that more recently historical archaeologists have “combined theories and methods from across the humanities and social sciences” and used postprocessual perspectives. Nonetheless, they refer to the isolation resulting from the specialisation of archaeologists – clay tobacco pipes, textiles, ceramics, etc. (Cochran and Beaudry 2006, 193). An example of one such archaeological investigation from Sandwich Castle, Kent, was published in *Archaeologia Cantiana*. The pipes are relegated to sixteen lines in a 25-page report. The report claims that “the clay pipe collection is...*considerable* (57 pipe bowls, 416 stem fragments, total 1415 gms)” (Stewart 2000, 70 with the author’s parenthesis but my emphasis). The pipes are described but no attempt is made at any level of analysis beyond suggesting a date; there is no reference to the typology used. The makers’ initials are reported without an attempt to identify them by name. The pipes, like the arrowheads and ceramics from Sandwich Castle are not illustrated although they each are given an isolating subheading in the report. It would be much better if such accounts could respond to Cochran and Beaudry’s appeal for a balanced, integrated and interpretative approach to archaeology. First the identification, which should be relatively durable and stable over time (a named typology, once established, is unlikely to undergo radical change). Subsequently comes the interpretation, looking towards the social and cultural identities of producers, users or discarders. This requires judgement with the outcome, hopefully, firmly integrated with the remainder of the report.

Applying a typology does not furnish a full and final statement; it merely provides one piece of information about the artefact. If classification can never vary or is the end in itself, then the classified artefacts become anonymous and the potential for getting close to the human, the original or almost any other meaning is lost. Loren and Beaudry (2006, 255ff) show the importance of flexibility and openness, especially perhaps when examining any easily

classifiable artefact. They demonstrate some of the histories that can be built around thimbles, going far beyond a mere classification. James Delle (1997, 1093) provides another warning that could apply particularly to museums: “methodologically, most archaeologists who examine the material culture of the recent past tend to focus on fetishised artefacts (particularly ceramics) refining chronologies and extending typologies while ignoring the social dynamics which created and gave meaning to those artefacts”.

This study of the workers in the Kent clay tobacco pipe industry is firmly supportive of the second of the two approaches outlined above. As Hicks and Beaudry write, the “sheer diversity and quantities of material that survive, and ...the relative proximity of the material to the present, both.....bring distinctive opportunities rather than essential differences” to historical archaeology (Hicks and Beaudry 2006, 3). Pipes were used at a time when literacy was spreading beyond the confines of the church or of the wealthy. Clay pipes were used by rich and poor for over three hundred years in Kent and throughout the country; they were used by young and old and by members of both genders and in a wide range of social contexts. Any study of the clay pipe industry needs to respond to the popularity of smoking and to the quantity of pipe debris that remains and look to offer as broad and integrated approach as possible.

The Literature

Having established the relationship between historical archaeology and archaeology more widely defined, and considered some contrasting approaches to writing about clay pipes, the remainder of this chapter will appraise the literature available concerning clay tobacco pipes. The published material relating to clay tobacco pipes addresses many different purposes. The review in this chapter imposes some order on the wide range of publications available and supplies one or two examples for each. Beginning with work in publications and organisations of national importance, it mentions briefly foreign journals, then explores regional studies and excavation reports before concluding with works that attempt to stimulate wider and popular interest in clay tobacco pipes.

The key questions to be asked of this material are what does the literature contribute to our knowledge of the clay tobacco pipe industry and, where possible, what might it add to our understanding of that industry in Kent. Sadly very little writing has taken the Kentish clay tobacco pipe industry as its prime focus, but much written material does offer perspectives and ideas that are relevant to the industry in Kent.

Articles in Academic Journals of National Societies*.*

These include seminal papers such as that by Adrian Oswald (1960) where the history of the pipemaking industry is traced across the country. Oswald attempts explanation as well as description and adopts a cautious approach. For example, where noting the expansion of the industry in the early eighteenth century, he says that "much of this may merely be due to more complete records" than in earlier years (Oswald 1960, 44). Oswald was one of the first to present a cogent evolution of the industry, to consider from a base of evidence how the industry had been organised, and to outline the nature of the export trade in pipes. He reviewed pipe bowl shapes and the variety in decoration and marking. Oswald was the first to present a list of known pipemakers across England. He proposed a typology that recognised regional variation. This typology was to evolve over the next decade, to concentrate on London makers, and was published by David Atkinson and Adrian Oswald in the *Journal of the British Archaeological Association*, in 1969. This later study has had a profound influence on the study of pipes and pipemakers. In it, Atkinson and Oswald rehearse some of the history of pipemaking, including exporting. The detailed analyses of makers' marks and pipe shape and decoration have proved of great value to archaeologists seeking to explain and date materials in the post-medieval contexts. London makers have had a major impact on the evolution of pipe shapes, especially in the early years and particularly on the makers active in the southeast of England. The typology proposed by Atkinson and Oswald (1969, 177-179) is a significant reference work today (a full discussion of this is provided in Chapter Two). Atkinson and Oswald included an updating of the 1960 list for London pipemakers. Both the 1960 and 1969 lists are arranged alphabetically by surname; it might have been more helpful to have used dates or locations but

the key point is that for the first time comprehensive lists of identified makers were made available to archaeology.

Papers such as those mentioned above, published in academic journals, have sought to synthesise and bring order to the work on clay pipes completed over many years by a number of researchers. Others have had a more narrow intent, for example Oswald's paper exploring some possible links between potters and pipemakers (Oswald, 1970).

An especially important national publication has been *Post-Medieval Archaeology* (the Journal of the Society for Post-Medieval Archaeology). This is the only national society which focuses on the period of clay tobacco pipes and so it has published a number of articles on aspects of pipemaking. Some are highly specialised, for example the exploration of the physical properties of the clays used in pipes in order to identify the source of the clay used in batches of pipes made at Pipe Aston, Herefordshire (Peacey and Vince, 2003). Others have developed studies of the use of pipes abroad, as with Natascha Mehler's work on the economic impact of pipes in Bavaria (Mehler 2009), and with Pieter Floore and Ranjith Jayasena's use of pipe finds to contribute to a widely based study of the development of European influence in Mauritius (Floore and Jayasena, 2010). A few articles focus on aspects of British pipes, for example, David Higgins' analysis of early Suffolk pipes from Landguard Fort (Higgins 2008, further considered below).

British Archaeological Reports

The most important and substantial academic studies relating to clay tobacco pipes have been published in a British Archaeological Reports (BAR) series entitled "*The Archaeology of the Clay Tobacco Pipe*". Many are edited volumes under the general editorship of Peter Davey. They are listed in *Table 3*, page 232.

The series was preceded by a single volume published as number 14 in the BAR British Series: "*Clay Pipes for the Archaeologist"* by Adrian Oswald. Peter Davey wrote in his editorial contribution to the first book in the BAR series *The Archaeology of the Clay Tobacco Pipe*, that "the publication of

Clay Pipes for the Archaeologist in 1975 has proved to be a milestone in pipe studies" (Davey 1979, 1). Oswald saw this book as a statement of the current knowledge of the pipe: "this book is an attempt to bring together the essential conclusions of this research (on clay pipes) under one cover and this is the product of many minds" (Oswald 1975, 1). Oswald wanted his book to become "a practical workhorse to the archaeologist in the field" (1975, 1). He recognised that much work remained to be done.

Oswald covers the introduction of tobacco and the organisation of the pipe industry and explains details of pipe manufacture. Although Oswald acknowledges the existence of earlier attempts at a typology, his presentation of a "simplified general typology" was one of the first to be widely adopted for use in the field wherever English pipe debris has been found (Oswald, 1975, 37-41). Although his typology was 'general', he goes to some pains to indicate regional variations in bowl form and discusses makers' marks, providing many illustrations. There is a briefer section on decoration and on internal and international trade in pipes. He produces maps to show the distribution of pipes of a variety of types, dates and sources; remarkably few of these are shown to be found in Kent. The second half of the book is filled with a list of the known makers sorted by county and by initials. Probably this includes some repetition where pipemakers moved between counties, e.g. William Birchall of Rotherhithe, London, in 1836 and of Canterbury, Kent, in 1845. Nonetheless, this list, used with the general typology, has proved of enormous value in dating archaeological contexts.

Oswald's *Clay Pipes for the Archaeologist* is a book of illustration and information; it does not seek to explain but rather aims to share insights. There are criticisms that can be made: the book is not well paginated and at times pages of diagrams, pictures and their accompanying notes interrupt the reading of the main text. The sources given for the pipemakers are abbreviated to the point of uselessness in places (for example a 'D' alongside a maker's name indicates that the name has come from a Directory but neither the publication date nor name of the Directory is supplied). Nonetheless, in terms of making available the then current state of

knowledge, and in creating a general typology, this book has been the most significant single publication to date, albeit now in need of some updating.

In the editorial to the first book in the BAR Series, Peter Davey listed the kinds of publication he anticipated: “regional surveys; methodological studies; technical investigations; and the presentation of closed and independent groups from excavations” (Davey 1979, 1). The early volumes contained a variety of short and longer chapters which met the criteria specified, however there was little significant mention of pipe-making in Kent. In the tenth volume (on Scotland), Davey’s editorial noted that “a lot has still to be learned about the changing socio-economic roles of the pipemakers and of their trading mechanisms and networks” (Davey 1987, 1). This statement reflected the fact that the BAR volumes presented useful data with some explanation, but the coverage was patchy and lacked the cohesion and rationale that the adoption or imposition of a common theoretical stance might have stimulated. Sometimes the authors provide opinions without adequate support. Thus Colin Tatman explains the limited quantity of published material on pipes in this manner with his first sentence: “as one of the lowly occupations of London, clay tobacco pipe making has attracted little study in previous centuries” (Tatman 1994, 1). The statement about lowliness is not tied to dates or precise location, nor is the rationale provided. A similar view is presented in his Conclusion (number 7, page 92). Nonetheless, Tatman presents a wealth of interesting information about the Southwark and Newington pipemakers. This is a regional study that fully meets Davey’s first criteria for a BAR publication but it is not altogether clear that his conclusions can inform pipe studies conducted outside London.

The most recent contribution to the BAR British Series is from Susie White (2004). White is writing of regionalism and trade and, at the start of her book, makes clear her understanding of both of these key terms. White (2004, 5) sets out her five research questions:

“1. Is it possible to define a style of pipe that is typical of a given study area?
2. Is it possible to define products of individual centres within a given study area?

3. Can trading dynamics of production centres within a given study area be assessed?
4. Can the influence of external production centres be assessed?
5. If any patterns can be identified in 1 – 4 above, to what extent can they be explained from the historic record?"

White concludes by showing how her research has answered these questions. She presents the recording systems for pipes and for the stamps that some pipes carry. White has trialed this system and demonstrates its potential for use at other archaeological sites where a substantial assemblage of pipes is encountered. Her book reveals the depth of study she completed and she has created a number of very substantial databases.

White's work is ten years old. More recent studies in historical archaeology, none of which has a focus on clay tobacco pipes, are tending to set the research within a theoretical framework or to make greater reference to the theories the researchers have found relevant (for example the Liverpool PhD thesis by Annie Gray, [2009]). White's study does refer to Renfrew and Bahn (*Archaeology: Theories, Methods and Practice,* 1994) and to some theories specifically relating to pipes (e.g. regarding the use of pipe bore diameters in dating fragments) but she does not suggest any theoretical approach that might pervade her research.

It should be recorded that eight volumes in the BAR Series '*The Archaeology of the Clay Tobacco Pipe*' listed in *Table 3*, page 232, are from the International rather than the British Series. Four refer to America, two to Europe, and one each to Jamaica and to Marseille.

Newsletters of the Society for Clay Pipe Research (SCPR)

The Society for Clay Pipe Research, founded in 1983, has produced a regular *Newsletter* since 1984. The contents of editions over ten recent years have been analysed and tabulated (see *Table 4*, page 233). What is clear is that the *Newsletter* regularly reports studies of assemblages of pipes from excavations; it makes full use of documentary sources and attempts to explore the lives of individual pipemakers, and of groups of pipemakers, often

family groups. This journal is wide-ranging in its contents, frequently covering news from beyond the UK and offering readers research reports on a great variety of pipe-related matters. Unfortunately, Kent rarely features in the *Newsletter*; there has been only one longer item on Kent beyond the London fringe in the period covered in *Table 4*. However, there have been many briefer references to Kent pipemakers and pipes in articles exploring such subject matter as legal cases, assurances and wills.

The SCPR *Newsletter* serves as an information exchange for members of the Society. Some articles offer an analysis of the information presented by bringing together ideas and data from a variety of sources. The Newsletter does not take a stance reflecting any overarching commitment to any theoretical perspective. Many articles in this publication show a small-scale approach. Often they look at an artefact, an individual family or pipemaker, or a geographical location. There are occasional articles which explore broader issues, and which offer fresh explanations or applications. In 2014 the Society re-launched its *Journal* which is a vehicle for longer articles.

The National Pipe Archive (NPA)

The Archive is a charitable body, founded in 1993 and based in the University of Liverpool, with two principal aims:

- to “collect, conserve and maintain a national archive of the tobacco pipe industry and related matters for the benefit of the public” and
- to “promote and encourage the general education of the public in the study of the tobacco pipe industry and related matters both now and for future generations” (from the NPA website).

As might be expected, the Archive is the repository for a number of pipe collections including some from London and the southeast of England. While the Archive does not publish anything itself, it holds a quantity of grey literature. Examples of the material held include catalogues of the drawings of pipes owned by such private collectors as Peter Hammond and Colin Tatman. There are unpublished academic studies such as those by G. Coupe on clay pipes from Stafford (*c*. 1975) and by Alison Clague on the origin and use of

clay pipes from Timbuktu (2000). There is also a collection of smoking ephemera.

Foreign Publications

While no references to the Kent tobacco pipe industry have been found in publications made outside the UK, a good number of articles exist that consider aspects of English clay tobacco pipes. These emanate mainly from Commonwealth countries and the USA. Such publications include *Australasian Historical Archaeology*, the journal of the Australasian Historical Archaeology Society; the *African Diaspora Archaeology Network*, which publishes web resources; *Historical Archaeology*, the journal of Society for Historical Archaeology in USA, and, internationally, the *Journal* published by the Academie Internationale de la Pipe.

A frequent topic is the source of pipes exported by UK manufacturers; it is also interesting to discover the names of French and Dutch manufacturers (reported by Robert Brassey 1991, 28) who also exported to wider Australasian destinations often via entrepôts in Australia and New Zealand. Brassey discusses the unusual use of transfer prints on pipes found at the site of the Victoria Hotel, Auckland. Denis Gojak and Iain Stuart make a more significant study when they consider the social relationships suggested by pipe remains and then raise issues of the economic circumstances of the pipe trade. This approach mirrors that advocated by British archaeologists who might seek to increase the depth of investigation into what pipes can help reveal about the social and economic contexts of their use. They acknowledge that “nearly every topic raised in (their) paper requires further research” (Gojak and Stuart 1999, 47).

Archaeological Excavation Reports Referring to Pipes.

Excavation reports are frequently to be found in the transactions of regional associations and societies. This may limit the circulation of such reports.

Reports usually offer information from within a well-defined area. For Kent, the prime source of archaeological reports is the Kent Archaeological Society’s annual publication: *Archaeologia Cantiana*. A recent volume containing

information relating to clay pipes is volume 127 (2007) where three references are made. One suggests the possible site for a pipe kiln in Canterbury where a trench dug by the Canterbury Archaeological Trust had found a brick-lined earth closet. The possibility of this being a kiln was mentioned but the failure to uncover any pipes does make this a very unlikely speculation (anon 2007, 321-322). A second reference was to a pipe found in an abandoned ragstone quarry near Westerham. The pipe maker was identified as Phillip Richmond of Tonbridge, shown incorrectly as Tunbridge in this volume. The evidence for ascribing the pipe to Richmond is not provided. The dates when Richmond was working and the date of a beer bottle label found at the site both agree and suggest that the quarry had ceased use in about 1860. (Legear 2007, 412-413).

The final reference to pipes in volume 127 of *Archaeologia Cantiana* was to a more significant site. It was a report of the excavation by the AOC Archaeology Group in advance of building a new shopping arcade at Fremlin Walk, Maidstone (Edwards 2007, 73-106, particularly 98, 99 and 104). Pipes, including kiln wasters, were found and the appropriate suggestion is made that a kiln was in the locality. Pipes are drawn and an attempt is made to identify the pipemakers, although one set of initials – CB – is left as an 'unknown'. The initials and pipe are illustrated; the pipe is dated between 1820 and 1840. It is unfortunate that the author of the report on pipes could not identify the maker who may prove to have been Charles Birchall, active in Maidstone and elsewhere in Kent at that time.

The excavation reports can be most informative and useful and seek to explain as well as to describe what has been found. Many are included in the publications of regional societies. For example, David Higgins on a Medieval Moated Manor in *East Anglian Archaeology* (2006, 118-125). In the section on clay tobacco pipes (section 5) earlier knowledge, where available, is applied and analysis and explanation are given of the new information presented. Another assemblage, also written up by Higgins, is from the Landguard Fort, Suffolk and appeared in *Post-Medieval Archaeology* (Higgins 2008, 258-269*)***.** This extensive contribution shows the difficulty of working with pipes where few, if any, previous assemblages have been studied. Working from first

principles, the pipes are meticulously recorded and drawn; a typology is created. The work on the pipes is placed alongside information from relevant documents and other artefacts found at Languard Fort to help create a fuller understanding of this site.

Such full and detailed reports are not the norm today and frequently excavation reports can focus on providing a detailed catalogue of what has been observed with little attempt to explore what the finds might add to knowledge of life in by-gone times. One example of this can be seen in the *Northamptonshire Archaeology* (Upson-Smith 2008, 205-6) where the report does little more than identify the pipes by type and possibly makers, notes where they were found, and comments on the milling.

Monographs on specific topics have the potential to develop issues relevant to pipes. For example: "*Bewl Valley Ironworks 1300-1730*": a Royal Archaeological Institute Monograph prepared by D. Crossley (1975). In this instance, where pipes were discovered, they were not the prime focus of the monograph and the treatment of the pipes is at times marginal. Referring to the pipes, the report mentions "a group that is typical of the William III - Anne - George I period in south-eastern England and contains nothing unusual or requiring illustration" (Crossley 1975, 56). The Report identified 38 pipe fragments; my re-examination of these finds held by Maidstone Museum established that there were 52 part or complete bowls, two of which appear to contain tobacco (Boyden 2003, 20).

Archaeological excavation reports are uncertain in their quality and, at times, in their accuracy. Superficial speculative interpretation may be mistaken. Often the information about clay tobacco pipes is relegated to a discrete entry usually included under 'other finds'. Frequently, such reports do little more than acknowledge the practice of smoking pipes at a site. This is exactly the sort of isolated report to which Cochran and Beaudry refer (Cochran and Beaudry 2006, 193). The research bodies publishing reports may lack the specialists who could make more of the pipe finds or they may lack the funds to engage a specialist. Equally, it is possible that the pipe remains would not stand further analysis. Although circulation of reports may be limited, very

often the emphasis is on the transmission of information rather than seeking any deeper interpretation. At their best, pipe contributions to archaeological reports can extend and enhance the knowledge of human activity at a site.

The Publications of Local Societies (see also 'Archaeological Excavation Reports Referring to Pipes', above).

While there appear to be no regular publications by smaller groups and associations, the countywide Kent Archaeological Society has produced *Archaeologia Cantiana* regularly since 1858. Reference has been made elsewhere in this chapter to some articles relevant to clay tobacco pipes in recent editions of this journal.

Archaeologia Cantiana has included many useful contributions, particularly about the early history and use of pipes. Some articles give evidence of the ways the provision of pipes and tobacco were used, for example, to stimulate support for candidates in elections. The extracts from the account books of Captain John Harvey record details of his expenditures in the 1770s and were published at the end of the nineteenth century (Dorman 1893, 222-228). Harvey stood successfully for election first as a jurat and then a Mayor of Sandwich, having spent considerable sums on entertainment which included outgoings on tobacco and clay pipes.

Two particularly important articles refer to the early and widespread adoption of smoking in London and in Kent. Sir Roger Twysden created a journal of his imprisonment by Parliamentary forces in the 1640s. He was held at the "Three Tobacco Pipes" near Charing Cross – some indication of the rapid rise in the popularity of smoking by that time. The details were written under the initials LBL – presumably, Rev. Lambert B Larking, the society's honorary secretary at the time – in 1859. (Larking 1859, 189)

Even more interesting was a book review made anonymously in 1902 of a privately published book by J. Meadows Cowper of *The Diary of Thomas Cocks* (covering the period from 25 March 1607 to 31 December 1610). This is especially significant as it is the earliest reference to smoking in the county

of Kent and is considered further in Chapters One (page 7) and Five (page 103).

Regional studies not linked to local societies

There are many studies prepared by individuals and museums which give a patchy cover of England; there is some variety in the purposes for which they were written. Many of these accounts are listed as *Table 5*, page 235. Many had a short print run and are no longer available to purchase. This record is not a definitive list; for example, it ignores studies which subsequently became British Archaeological Reports publications (see *Table 3*, page 232).

The regional studies tend to have a target audience of interested local people and members of historical, archaeological or antiquarian societies. The studies vary too widely in their content and also in their value to archaeologists to permit a useful summarising comment here. Nonetheless, the existence of such booklets is testimony to the quantity of largely unsupervised research that has been undertaken at a local level since the middle of the twentieth century.

The fact must be recognised that there is no county, city or town study dedicated to clay tobacco pipes from Kent.

Popular Publications.

Perhaps the most comprehensive and widely available of popular publications is the Shire Book "*Clay Tobacco Pipes*" by Eric G. Ayto (third edition, 1994). This is a brief booklet (32 pages) but it attempts to provide a wide-ranging introduction to pipes, pipe making and pipemakers. It informs the interested members of the public and the potential collector and gives details, now out of date, for taking the study further. It contains diagrams and photographs and gives some information on pipes made in Europe. Throughout, this booklet seeks to describe, to explain and to provide an accessible basic background well suited to those with a passing interest in pipes. There are some criticisms that could be made, for example in the typology (though not so called) of 15 bowl shapes where the regions of pipe manufacture are not shown (Ayto 1994, 8). Perhaps the weakness exposed here is of trying to present a single

booklet that could be appropriate throughout the United Kingdom. However, Ayto does not pretend to offer a detailed analysis of any aspect of clay pipes but seeks to stimulate the reading public to take further their response to the information and encouragement he provides.

An earlier publication is "*Clay Pipes*" by Edward Fletcher (1977). This booklet of 28 pages reveals its target audience on the back cover: it is intended for the "growing number of enthusiasts (who) are building up collections spanning 400 years of pipe making". The inclusion of chapters entitled "Sites for Pipe Hunting" and "Valuing Pipes" show that the approach taken by Fletcher jars with today's emphasis on preservation and non-invasive approaches to archaeology (Fletcher 1977, 23 and 24). This publication does consider differences in bowl shapes, but confusingly presents sixteen "British bowl shapes 1580-1850" (Fletcher 1977, 7) followed by seven more pages of pipe outlines that purport to illustrate additional types of bowl unique to various areas of the UK and Holland. This publication is now out of print, although copies exist in the British Library and in the Bexley Library Service.

CDs and Articles on the Internet

Some material is now not presented in hard copy but is available in other formats. The most widely circulated CD is the one regularly updated and prepared by Heather Coleman called "*The Art and Archaeology of Clay Tobacco Pipes*". In a sense, this is a more modern presentation of Ayto's Shire publication and covers similar topics. Coleman markets her disc as being "a useful guide to collectors, dealers, archaeologists and anyone with an interest in this subject" (CD sleeve notes, 2006). Its key strength is that the CD contains a great number of photographs. Coleman gives no special emphasis to Kent.

The internet offers a plethora of material. Some of it is also available in published form; for example, Allan Peacey's 1996 PhD research on "*The Development of the Clay Tobacco Pipe Kiln in the British Isles* (Peacey, 1996b). Kieron Heard has published work on the Internet under the title "*London Clay Pipe Studies*" (Heard, 2012) – this largely reflects the research he undertook while working for the Museum of London Archaeology.

What is interesting is to note the rate at which material is added to the Internet. Restricting sites to those of UK origin, a Google search for “clay tobacco pipes” on 1st August 2012 produced 5080 hits; by 28th September 2012 an identical search gave 5310 results. Adding ‘+Kent’ to the search resulted in no sites being found, however this is misleading as sites such as that of the SCPR do include references to Kent.

It is impossible to present any summative review of the wide range of pipe-related material that is available on the Internet. As a word of caution, perhaps it should be stated that not all is as scholarly as the writings of Peacey and Heard.

Conclusions Noting Some Significant Omissions.

Clay tobacco pipes have generated a rich and varied literature. Probably very few of those who have contributed to the literature have paused to consider whether what they have written might be interpreted as historical archaeology. Nonetheless the literature on pipes and pipemakers clearly does contribute to that canon.

Studies of the clay tobacco pipe industry reflect many of the various definitions of historical archaeology (for example Hall and Silliman 2006, 2; Deetz 1996, 5; and Johnson 2010, 190). Perhaps the website archaeology.about.com contains a germ of truth when it claims “There are probably as many definitions of historical archaeology as there are historical archaeologists” (anon 2013). For this research, it is essential to remember that the life of the clay tobacco pipe industry in Kent matches the period of increasing public literacy. This is the key criterion for identifying historical archaeology preferred in this thesis.

The range of pipe-orientated studies is broad. It includes writing about artefacts such as the pipes themselves which may, in turn, encourage a wide range of further studies taking a broad view of society. For example, changes in bowl size could indicate variations in the availability of imported tobacco, the changing price of tobacco, the taxation policies of governments, and the

technical skills required for pipe production. Bowl decorations might suggest the interests and preferences of smokers covering areas as diverse as favoured public houses, political affiliations, sports interests, and preferred music-hall stars. Changes in pipe stem length can be pointers to the activity or the leisure available to the smoker.

Research in the field of clay tobacco pipes need not simply focus on the pipes but can encompass documentary evidence recording such events as the movement of raw materials, the export of pipes, and the inventories made of pipemakers' possessions at the times of their deaths. Equally, there is a wide range of other artefacts associated with pipes, such as pipe racks, tobacco wrappers and tobacco pouches, while many buildings relate to pipes and to smoking, for example pipe kilns and smoking rooms.

What is missing is the application of an explicit theory to consider the agency of Kent pipemakers within the framework of the structures (and the agency of others) that confronted them. This research contributes to putting right this omission and has a strong emphasis on the Kent clay tobacco pipe-making industry which has not been studied adequately in the past.

A lot of the literature concerning the industry is general in its coverage or draws on information from outside Kent. This is still helpful as it provides insights and indicates areas for study that may be appropriate for Kent too. Nonetheless little has been written specifically about the Kent industry. The use of relevant historical documents, the building of a record of over six hundred people known to have worked in the pipe trade in Kent, and the information from a preparatory study of over four thousand pipe bowls found in Kent are moves this thesis makes towards revealing something of the Kent pipe industry. Structuration provides the theoretical base from which to undertake this exploration of that industry. The interpretation and use of structuration are fully considered in Chapter Four. That chapter, on the Theoretical Perspective, will show that the application and use of a theoretical stance in research within historical archaeology is not new. However, in taking such a position in the study of Kentish clay pipes, a fresh approach is being made.

The attraction of structuration theory is that it provokes broad questions. The issues raised by this theoretical approach questions the nature of the society in which pipemakers lived, the structures within which they operated and the ways in which their agency changed society. It asks about the potentials for change, the forces operating to cause change, the changes intended and the changes achieved. It considers how people organised their lives. Of course, in exploring the structures and agencies at play in a society the accusation can be levelled that one is speculating and giving voice to a narrative that cannot be proved. This may be true – we cannot recreate the world that has gone, but we must inject human plans, ingenuity, hopes and fears or what we study is sterile and lacking humanity. We need to people situations with emotion and feeling to help understand why things were as they seem to have been. This is where Wilkie (2006, 15) and Cochran and Beaudry (2006, 193) are correct. There is a need for imagination and for interpretive analysis for the humanity of the past to be suggested, a point developed further in Chapter Four. It is here that Davey's comment about much still to be learned about changing socio-economic roles of pipemakers is also shown to be relevant (Davey 1987, 1).

The injection of an overt application of a theoretical perspective to pipe research is at the heart of this thesis. It has not been attempted before. To what extent does the application of structuration theory to the Kent pipe industry create fresh understandings of the past? This is a question worth asking. Using structuration theory flexibly may permit the probing of some of the evidence and assumptions that often seem unquestioned in the literature to date. The next chapter explores and adapts that theory in ways relevant to the Kent clay tobacco pipe industry.

CHAPTER FOUR
THE THEORETICAL PERSPECTIVE OF THIS THESIS

Introduction

The key sections of this chapter are a consideration of the value of theoretical perspectives in archaeological research, a review of some of the ways in which structuration theory has been used within historical archaeology, and an exposition and explanation of how that theory will be applied in this thesis.

The Need for a Theoretically Aware Approach to Historical Archaeology

There are many theories which could facilitate this study. As John Barrett puts it, a theory "can orientate our ways of looking at and interpreting certain conditions" (Barrett 2001, 142). Any theoretical perspective may need to be tailored to fit the subject in hand and this must be made clear to all who read the thesis. What is essential is to adopt a standpoint from which to organise and consider the research. The approach taken in this thesis is likely to overlap with that used by others but it will be applied in a fresh context and in a new way. It will indicate the assumptions and organisational methods which will guide and also limit the research.

The theoretical perspective adopted is likely to reflect the researcher's attitudes, interests and experience as well as being appropriate for the material studied. This thesis explores the clay tobacco pipe-making industry in Kent. In particular it studies the lives and employment of those who worked in the pipe industry. Neither the industry itself nor the workers in the industry have received much attention in any discipline, yet the products of the industry were distributed across Kent society for 300 years. The workers certainly had few opportunities to speak for themselves. This view is very much in keeping with the thoughts of James Deetz who wrote of the great significance of the common person in historical archaeology (Deetz 1988, 363). Similarly, Mark Leone advocates an approach which is fundamental to this thesis, that there should be a "concern with forgotten, anonymous and unknown peoples and groups" (Leone 1995, 251). It is this focus on the people more than on their products that is an important factor in considering

an appropriate theoretical stance for this thesis. Often pipe researches have focussed on the pipes themselves, almost to the total exclusion of those who worked in the industry. A theoretical position is required that will provide something of the missing narrative of the workers' lives and focus on the pressures under which they lived and to which they responded. It must encourage the consideration of their hopes and fears and review their actions in terms of the intended and accidental consequences in their society. The focus recognises that the lives of workers in the pipe industry were set within many structures; some they perceived and understood, but others were unknown but which are seen subsequently as relevant to this study.

This thesis adopts a postprocessual approach which encourages an emphasis on the individual and a search for meanings. This permits study which is eclectic, although rigorous and interpretative. It will allow a focus on social structures and agency, and on the individual, while being aware of such issues as gender and class. Any study which explores the significance of human aspirations, fears, plans and reactions must recognise the impossibility of finding 'all the right answers'. What the thesis argues may well attract counter arguments; dialectic is both anticipated and welcomed in a work of this kind.

It is important to make an attempt to understand how and why people in the past did what they did. This is rarely a simple matter and it is easy to offer interpretations or conclusions without sufficient evidence. This thesis will attempt to fathom the motivations of the people studied, but will also seek to avoid unjustified irrelevant guesswork. To succeed in this, the archaeologist still needs to be imaginative. Laurie Wilkie (2006, 15) feels it essential that archaeologists use "historical imagination, which the writer draws upon to make meaningful interpretative connections between materials or evidence". But, does imagination introduce partiality? Are archaeologists so well placed as to report in an unbiased fashion what they discover? The answer seems 'certainly not'. At best we are "participant observers" (Yentsch and Beaudry 1992, 3-21). In becoming involved, we put our neutrality aside. As with any who study what has gone before, our knowledge is always incomplete.

It may be sufficient for us to accept our partial knowledge of our own assumptions and so, through debate and challenge, refine our interpretation, seeking greater realism. The creation of artefact and personal biographies is one way to attempt this: what Harold Mytum calls “new ways of telling” (Mytum 2010a, 241). These try to make the past more comprehensible and accessible, and to stimulate dialectic as well. Examples can be found using artefacts: an awl (Spector, 1996) and a soap dish (Wilkie, 2009). People from the past may be given new voices as with a Victorian hostess (Gray, 2010) and eighteenth century tenant farmers (Mytum, 2010b). These attempts encourage a searching for variety in the approaches that could be made to an object or person from the past.

The creation of a biography is certainly possible for a clay tobacco pipe. Igor Kopytoff argues human beings can be the subject of many biographies each with a different focus; he lists psychological, professional, familial, and more, all of which select “some aspects of the life history and discards others.” He goes on to confirm “biographies of things cannot but be similarly partial” (Kopytoff 1986, 68). Although it is inappropriate to present pipe biographies at this juncture, any of the following situations may be developed (or merged) and biographies created to show different ways in which a single artefact could be viewed.

To the maker, a clay pipe is a means of earning, not something to be retained and possessed but something to be resourced, made and fired into something that is marketable and marketed. This Kopytoff terms the “process of becoming” or “commoditization” (Kopytoff 1986, 73).

The end user, the smoker, would offer a different biography as (s)he enjoys a pipe where the price is acceptable, and the qualities appropriate (stem length, bowl size, nature of decoration, and so on).

The discarder, perhaps having broken the pipe or found it damaged, or considering it foul, throws away or loses the pipe in a midden, a river, a roadside, or wherever.

The archaeologist who finds the pipe may simply discard it again, but, one hopes, might rather find it useful – something to be classified and

interrogated – an item that proves helpful for dating a context and, with other finds and documents, is an artefact which aids the formation of conclusions about the lives of the people who made or used such pipes in a particular location and time. The archaeologist might also make some deductions about the maker, the nature of the industry, the trade in pipes and something of the preferences of the smokers.

Perhaps, as an alternative, the pipe is found by a collector who prizes it for its shape and decoration or sees it as a missing element in a collection assemblage.

Of course, ancient pipes can have many other uses and meanings, from children's playthings, as bubble pipes maybe (Ayto 1994, 10), to murder weapons (Norton 1991, 20).

Alison Wylie (1989, 7) quotes from Bernstein (*Beyond Objectivism and Relativism,* 1983) that researchers "must exploit 'multiple strands and diverse types of evidence, data, hunches and arguments to (assess and, ultimately, to) support a scientific hypothesis' " (Wylie's parenthesis). She indicates the values seen in "the literature of collateral disciplines" (Wylie 1989, 13). Perhaps most helpful is her use of the metaphor of cables which link "different *independent* sources" (Wylie's emphasis) and which "are not just mutually reinforcing, but are also, and crucially, mutually constraining" (Wylie 1989, 16). This view is particularly relevant when addressing historical archaeology simply because of the multiplicity of sources and theories open to this discipline. The aim is to accept the value of contrasting views and of differing orientations between which to tack and, hopefully, arrive at a balanced conclusion.

Equally, a multiplicity of meanings could encourage confusion and a lack of direction. It seems sensible to look for an approach that is more united. Before deciding on the most appropriate theoretical approach to use, it was important to explore some that seemed potential candidates. Four possibilities were considered. Initially it appeared that the most appropriate theoretical vehicle for this thesis could be structuralism. Structuralism has its roots in the family of hidden rules that guide language. The anthropologist, Claude Lévi-Strauss

was one of the first to look for similar structures in other fields. Adam Kuper, in his obituary for Lévi-Strauss, wrote that his "ambition was to show that underlying the most exotic beliefs there was a common, rule-governed human way of making up ideas" (Kuper, 2009). It was this emphasis on being 'rule-governed' that makes structuralism too rigid; it provides little space for individuals (or collections of individuals) to push for changes in their society. It provides a one-way analysis of the interaction between structures and individuals where structures affect individuals but individuals are almost powerless to create change in the structures. This limitation largely ignores the possibilities of human agency and points towards a near static society or at least a society where the perceived path of its evolution could not be much challenged.

Another alternative was to look for an archaeological theory strongly influenced by Marxist thought. This would provide a broad worldview and certainly permit a concentration on the position of workers. However, the focus in Marxism usually favours the large-scale, looking more to the workers rather than to a worker. This is one reason why adoption of this grand narrative is inappropriate in this thesis. Marxism sees "human history as about the growth of power" (Johnson 2010, 95). A pipemaker often works alone and is in a fairly powerless situation, having limited industrial muscle on her/his own and being unlikely to exercise widely significant power except possibly in conjunction with others. Regular or extensive collaboration were not features of the clay tobacco industry, especially in Kent. Matthew Johnson argues that "archaeologists influenced by Marxism...have seen archaeological practice and interpretations as partly or wholly political in nature and...have often seen their own work as in part a wider political exercise" (Johnson 2010, 96). Mark Leone begins an article with the following statement: "I raise the need for historical archaeology to be more involved with the politics that sustains it." (Leone 1995, 251). While this thesis does not seek to be set in such an overtly political framework, it will not be forgotten that research in the twenty-first century could easily become the vehicle for western attitudes to individual actions and freedoms that are not universal throughout time or space. As Julian Thomas (2000, 7) reminds, "acquisitiveness and the profit motive are

not written into the human condition", though they may be relevant for the period and context of this study.

A final alternative could have used the 'four haunts' put forward by Charles Orser. He suggests there are four haunts or "historical processes that underlie all historical archaeological research whether or not the archaeologists realise it. The haunts are colonialism, Eurocentrism, capitalism and modernity" (Orser 1996, 22). These haunts each play some part in Kent's clay tobacco pipe industry. For example, colonialism is central to the fluctuations in the economy, as seen at the time of the American War of Independence (see pages 144-145 below). It is important not to miss the issue of Eurocentrism, as illustrated when the significance of Native American material culture is ignored. Capitalism and modernity permeate this study of Kent pipeworkers through 300 years although, as Croucher and Weiss note, capitalism is in a process of constant evolution and change (Croucher and Weiss 2011, 9).

While Orser's haunts have relevance to this study, it seems to be most appropriate for them to be considered at an industry-wide scale. Kathleen Deagan refers to the haunts as "forces" and "enormously complex processes" (2013, 163). A more flexible and finely tuned approach may permit more readily an exploration of the lives of individual pipe makers. What is needed is a theoretical foundation that allows the revelation of the varied and far from universal structures they experienced and shows the differing ways in which they responded.

Despite the maxim of Delphi to 'know thyself', this is a command too far; it is impossible for any individual to avoid some degree of bias, but sometimes this is difficult for individuals to acknowledge. To resolve this issue, it is better to adopt an explicit theory and use this, clearly stated and amended as necessary, to facilitate giving order to the data and in making interpretations. It may be better to wear a badge displaying the values that others can recognise. Rather than pretend to be objective, the archaeologist should look for an orthodoxy that will provide given and recognisable assumptions and emphases with which to interpret the archaeological evidence.

Nonetheless, many nameable theories conceal the fact that a name can mean different things to different people. The badge may deceive as what the badge-wearer intends might not be what others seeing the badge understand. Similarly, the chosen perspective can change and evolve and again cause confusion where the intent was to spread clarity. This underscores the importance of revealing references and sources so that the roots of a viewpoint can be identified and any evolution of opinion tracked. It is important that anyone using a theoretical perspective or approach makes clear his or her meaning, understanding, interpretation or development of the original standpoint.

In this thesis, the prime focus is on the makers of clay tobacco pipes over three centuries in Kent. This requires the adoption of a theoretical standpoint that is flexible and which permits a focus on the reciprocal relationships between individual and society and between agency and structure. Structuration theory is highly appropriate for these purposes.

Structuration: a Brief Historiography and Consideration of its Place in Archaeology.

The relationship between individuals and society has been debated in many different disciplines over centuries. Arguably, there is much in common between structuration theory and the ‘invisible hand’ of the economist Adam Smith. In the following familiar extract, Smith provides a pre-echo of structuration when he demonstrates an early appreciation of the impacts of an individual on society, even to the point of unintended consequences. This was a matter Anthony Giddens, especially, was to consider two hundred years later (Giddens 1984, 9ff):

> “(Every individual) neither intends to promote the public interest, nor knows how much he is promoting it. By preferring the support of domestic to that of foreign industry, he intends only his own security; and by directing that industry in such a manner as its produce may be of the greatest value, he intends only his own gain,

> and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Nor is it always the worse for the society that it was no part of it. By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it."
> (Smith 1776, book IV, ch 2, para 9)

While Smith separates the individual from society, structuration theory sees the individual as both the creature of society and as its creator. By the agency of individuals, they reinforce or change their society during their lives (and, conceivably, even after their deaths), while society itself is re-forming the individuals of which it is composed.

Karl Marx also considered ideas that may well have fed into structuration theory when he wrote:

> "Men make their own history, but they do not make it as they please; they do not make it under self-selected circumstances, but under circumstances existing already, given and transmitted from the past. The tradition of all dead generations weighs like a nightmare on the brains of the living".
> (Marx 1852, section 1, page 1)

Marx here stops at the pain of a nightmare; the more recent developments of structuration have stressed the interrelationship of past, present and future as individuals respond to their society and are empowered to attempt structural change and so release some of the inherited pain.

The anthropologist, Pierre Bourdieu worked on the relationship between society and the individual. Initially, he took a structuralist stance as demonstrated in his article on the Kabyle House (1970, reprinted 1990). This is included in Bourdieu's *The Logic of Practice* where he notes that this was "perhaps the last work I wrote as a *blissful* structuralist" (Bourdieu 1990, 9, my emphasis). Perhaps Bourdieu was indicating that structuralism is a relatively

easy theory to work with whereas exploring the expression of individual agency must have presented a greater challenge. His new ideas have been received, studied and developed ever since the publication of his *Outline of a Theory of Practice* in 1977. Many who read Bourdieu came to accept that an individual was not powerless in his or her society, but had a measure of agency which could cause change in that society. As Bourdieu wrote later in his *Distinction*: “agents..., far from reacting mechanically to mechanical stimulations, respond to the innovations or threats of a world whose meaning they have helped to produce” (Bourdieu 1984, 469). This relationship, between society and agent, has continued to receive a good deal of attention, but the conclusions reached so far vary in emphasis and substance. This is clearly shown by Dobres and Robb in their revealing summary table: ‘What is Agency?’ (Dobres and Robb 2000, 9). There is a good deal of debate over a number of issues relating to agency, such as what or who might constitute an agent. For example, H. Martin Wobst raises the question of agency in both the agent and in any artefact used (Wobst 2000, 42). Pam Graves rightly feels that an analytical approach to agency “prevents the relegation of the subject to a helpless cultural dupe” (Graves 2000, 13). This thesis will be presented in the light of this opinion. For the purpose of this research, the fairly conventional approach to agency will be adopted. Here it will be confined to the prerogative of humans who exercise choice and take action, for which they have resources, and in which they have an intentionality.

Many have joined the debate about the relationship between individual and society. Most important, although working both independently and in a different discipline from Bourdieu, is the sociologist Anthony Giddens. His first significant contribution to the question of the relationship between agent and society is his book *The Constitution of Society* (1984). It was Giddens who coined the word ‘structuration’ to describe this area of work. He uses it as the subtitle to that book: *‘Outline of the Theory of Structuration’*.

In a similar way to Bourdieu, above, Giddens describes the theory of structuration very simply: “human societies are always in the process of structuration. They are reconstructed at every moment by the very ‘building

blocks' that compose them – human beings" (Giddens 2009, 9). But what has emerged since the publication of Bourdieu's seminal book, *Outline of a Theory of Practice,* in 1977, is a theoretical position and not an agreed, tidy, or complete theory.

Subsequent to their initial energising impetus, both Bourdieu and Giddens have published extensively on structuration. Although both writers are now firmly linked to structuration in many peoples' minds, it appears that they worked quite separately. Nonetheless in many ways their work is complementary and, in some respects, reinforcing. Thus it is possible to link together what Giddens in particular wrote about social structures with the ideas Bourdieu developed on the acquired dispositions which he called *habitus*. Bringing together these two concepts has helped develop fresh ideas about how individuals (and at times wider groupings) handle and influence the evolution both of their society and of themselves.

There are several areas where original concepts appear to be expressed in an imprecise or confusing way. For example Bourdieu offers many different statements on the nature of *habitus* (see pages 81 and 82, below). Perhaps ironically, Giddens, as a sociologist, can write that "it is essential to avoid the assumption that what a 'society' is can be easily defined" (1984, 283). For him, society can be a bounded system or merely a social association in general; Giddens finds this double meaning "useful" (1984, xxvi). He notes, and seems to welcome, the ambiguity of the term as "less unfortunate than it looks" (1984, 163). This seems to be the key approach in structuration. There is ample scope and encouragement for researchers to take such fundamental tenets as the *duality of structure*, an idea that explores the reciprocal intertwining of social structure and agent, and to adapt and use them as they find most appropriate for their study (Giddens 1984, 25)

Giddens sees this as a strength rather than as a weakness in structuration. He writes:

> “that (he does) not feel overly sympathetic towards the ways in which most authors have employed (his) concepts in their work. Most often this is because they have tried to import concepts (he) developed *en bloc* into their research, seemingly imagining that this will somehow lead to major methodological innovations. ....In *The Constitution of Society* (he) emphasised that the theory should be utilised only in a selective way in empirical work and should be seen more as a sensitizing device than as providing detailed guidelines for research procedure” (Giddens 1989, 294).

As if to make the point more obvious, Giddens repeated the phrase ‘sensitizing devices’ twice in his article ‘*A Reply to my Critics*’ (Giddens 1989, 294 and 297). This reinforced what he had written earlier, that structuration theory is offered as “sensitizing devices, nothing more” (Giddens 1984, 326). Giddens makes clear that “structuration theory is not intended as a method of research, or even as a methodological approach”, and claims it is “an eclectic approach to method which ...rests on the premise that research enquiries are contextually orientated” (Giddens 1989, 296). However, he is categorical in saying that “there may be no structurationalist programme of research” (Giddens 1989, 297). It seems reasonable to suggest that Giddens would agree with Bourdieu’s development of Immanuel Kant’s dictum (Kant. A. 1781, 51) which, in translation, originally read "Thoughts without content are empty, intuitions without concepts are blind" and which Bourdieu amended to “theory without empirical research is empty, empirical research without theory is blind” (Bourdieu 1988, 774/5).

Bourdieu sees empirical research and theory as essential partners, but like Giddens does not give instructions on how to conduct research based on his theories, although his writing includes his own researches. What Bourdieu does is to provoke thought; his work “is enormously stimulating, he is good to think with” (Jenkins 1992, 176). Bourdieu gives archaeology a nudge, not a prescription – he suggests a way to go or an avenue worth exploring. Like Giddens, he does not set rules or rigid markers; perhaps therefore his use of

a game metaphor in *The Logic of Practice* (1990, 66ff) and in *For Heterodoxy in Social Science* (1988, 782) may be misunderstood. He is not prescriptive and does not define rules or laws.

This thesis is not about the criticisms (constructive or destructive) that structuration theory has attracted; the intent here is to use structuration theory as a tool and stimulus to research and not necessarily to contribute to its evolution. The key issue is the potential of structuration theory to throw new light on the lives of those involved in the pipe-making industry in Kent.

The Use of Structuration Theory in Archaeological Research.

Many opportunities for applying structuration have been taken by researchers over the past thirty years and in many disciplines. The results of a recent library search, undertaken in preparation for writing this thesis, show a clear bias in favour of research with a social or business theme. It is interesting to note that where a theorist is named by the researcher, it is Giddens alone who is credited, although Bourdieu and other workers in the field of structuration may well be acknowledged in the text and/or references accompanying some of these articles.

There have been several attempts in archaeology to apply some of the concepts of structuration. There are pitfalls to avoid. Giddens comes very close to making a case very familiar to postprocessual archaeologists, that our knowledge of the past is partial, and that it will be influenced by interpretations and ideas from our own experience rather than present a true and final account of some past event or activity. He warns:

> "Whenever we analyse large swathes of history, we are liable to find ourselves with an aggregate of 'causal influences' rather than conclusive generalisations about why things 'had to happen' as they did. Although these can sometimes be inferred, and generalised about, our attempts at explaining general

> patterns of social change are liable always to remain fairly fragmentary" (Giddens 1991, 206).

The significant point missing here is that, as archaeologists seeking to uncover something from the past, we are ourselves active agents, every bit as powerful in our interpretations as those who lived in the ages we study. This is neatly expressed by Held and Thompson (1989, 4) who refer to a "double hermeneutic" – the meeting of our interpretation(s) of a social action with the understanding(s) of those who took the action and who made up the social world which we are studying.

Structuration theory has been applied within the archaeological literature in ways which vary quite widely. The examples which follow have been chosen to illustrate this variety in approach and to show where this research fits within the annals of archaeological literature that has made use of structuration theory.

Some writers tend to provide a brief, theory-based, introduction and then return to the theory towards the end of their text. Frequently such studies do not make a detailed application of the theory through the central development. This is not to make destructive criticism of such uses of the theory; however the reader may be left feeling that these studies split the development of the theoretical aspects of structuration from contextualised empirical research. Either aspect might stand as valid study on its own. Three typical examples are based in research on early peoples. One is Arthur C. Joyce's work on the foundation of Mount Albán (2000). Another is a study of ancient Mayan ritual by William Walker and Lisa Lucero (2000). Some more fully developed pieces of research adopt a similar approach; for example, Oliver Harris on Neolithic sites in Cambridge and Wiltshire (2003). Although these works have similarity in the ways the authors develop their arguments, they do show differences in the uses they make of structuration and in developing the theories in ways appropriate to their subjects. Joyce, for example, draws on the works of Giddens and Bourdieu but takes them further in terms of stressing the perhaps underdeveloped importance of psychology and personality to

understand how the dispositions of *habitus* give rise to the agency which interacts with the structural environment (Joyce 2000, 72). Harris too sees it important not to forget "how memory and emotion affect agency and action with the relationships and structures in which people reside" (Harris 2003, chapter 1, page 5). Both Joyce and Walker and Lucero explore the role of power in society to influence structural change; Walker and Lucero also consider the life histories of structures.

Kenneth Sassaman's work on the Stallings Culture in the southeast of USA modifies the approach of separating a theoretical account from the subject of his research. (Sassaman, 2000). His article begins and ends with a consideration of the value of a theoretical approach to archaeology. He explores individuality in terms of motivation (p149) and considers the place of resources in determining power (p150).

Katherine Giles adopts a similar structure in her British Archaeological Report (2000). She offers a full exposition of the theoretical positions she adopts before providing a detailed investigation of the guildhalls in York. Her work concludes with a social analysis of the guildhalls which is clearly and deeply rooted in her theoretical perspectives. Understandably, given her focus on buildings, she would like to use Giddens' concept of *locales*. Giddens sees these "provide the settings of interaction" where power can be exercised.... A *locale* is where "the routine activities of different individuals intersect" (Giddens 1984, 118ff). Giles' research leads her to conclude that this is an idea "never really explored by Giddens" (Giles 2000, 10); this is a view shared with Barrett (Barrett 1988, 9). Certainly situation – time and space – are important when agency is considered.

Other archaeologists refer to structuration theory but do not attempt to use it or to develop the theory in ways that Giddens would encourage and which might have been appropriate to their task. Ian Mellor (2005), writing of textile mills in Yorkshire, provides such an example. He draws parallels with the work of Giddens (1984) and Bourdieu (1977) and uses some of their key

terms (*habitus* and *locale*, for example) but does not seek to base his writing on their theories.

Two final examples come closest to the ways in which I approach structuration theory and both integrate the theory fully and flexibly with the research. Vic Taylor (2003) uses structuration theory throughout his paper on the post-medieval industrial archaeology of North Queensland. There is scarcely a page in his article which fails to include the language of structuration. Taylor looks to other theories briefly, complains that Giddens' texts "are not easy reading" (2003, 131), but is still content to use structuration theory, to adapt it where he feels necessary, and to apply it to his study. Some of his revisions to the ideas put forward by Giddens are quite radical. For example, his notion of "the duality of structure" (Giddens 1984, 25), which he thinks "should be seen as human agency's reaction to landscape in terms of the environment" (Taylor 2003, 132). Taylor calls his article "a test case" and it appears that, used flexibly, structuration provided him with some new tools for research. Taylor writes that Giddens' work was "adaptable to the present broadening archaeological gaze as it attempts to reach beyond a normative research design" (Taylor 2003, 129).

Like Taylor (2003), Ray Riley and Tony Yoward (2001) use a diagram to show their application of the structuration model to the material they study. They use headings that make use of the language of structuration. In their first paragraph they introduce two terms: "top-down" and "bottom-up". Such terms tend to suggest rather more emphasis on the locus and dominance of power in society than does Giddens who, writing of power, looks for a "dialectic of control" (Giddens 1984, 16). To be fair, Riley and Yoward do not write of actors being dominated but instead write of them being "*influenced* by the political, social and economic environments of the day (top-down *influences*)" (Riley and Yoward 2001, 85 – my emphasis, their parenthesis). Although Riley and Yoward do not make this claim, it is not unreasonable to see some similarity between these 'influences' and the conventional definition of 'structures'. The words they deploy could be considered to parallel Giddens' "authoritative resources", which he sees as contributing to the formation of

structures and representing the “result from the domination of some actors over others” (Giddens 1984, 373). Riley and Yoward refer to “bottom-up reactions” which are the “individualistic” interpretations of actors based on the capital they have available, their level of initiative and their understanding of technology (2001, 85). Again, these have similarities with more conventional structuration theory, for example with the varying strength of agents using allocative resources which “derive from human domination over nature” (Giddens 1984, 373).

Riley and Yoward and also Taylor have made use of the essential idea of structuration – society affects the behaviour of individuals and, at the same time, the actions of human agents affect the evolution of society. However, in applying Giddens’ and Bourdieu’s work in empirical studies they have found it beneficial to develop the original concepts in ways that assist their research. This mirrors the spirit in which I, too, approach structuration theory.

The Application of Structuration Theory in this Thesis.

The archaeological works referred to above show their authors found it was necessary to absorb, develop and refocus elements in structuration theory. This thesis will continue in a similar manner to adapt structuration to its particular requirements. The two most important concepts that require review for this thesis are the natures of ‘structures’ and of ‘*habitus*’.

While Bourdieu does see the agent and society in a reflexive relationship, he seems to see social structures as rather more external and distant from the influence of the agent individual than does Giddens. Bourdieu looks more for the structures produced in the *habitus* (1990, much of book 1, chapter 3). Where he does consider social structures, he writes of it being possible to make an “analysis of the objective structures” that enables “the experience of social agents”. Bourdieu takes the view that it is necessary to see both the agent’s point of view and the “objective structures” which “determine the set of structural constraints that bear on interactions” (Bourdieu 1988, 782). Perhaps there is an echo here of Bourdieu’s early interest in structuralism (as

instanced in '*The Kabyle House or the World Reversed*' originally published in 1970).

For Giddens structure and agency are not synonyms. Structure on its own is powerless; action on its own is rudderless. Even though they are working in harness, by doing so they are not reformed into a third, new feature. They remain separate but cannot exist without each other. It is difficult to avoid the conclusion that a duality of structure must be almost impossible to define, let alone study how it might function in an archaeological research context.

The concept of 'the duality of structure' is central to Giddens' work (Giddens 1984, 25). Rob Stones puts this clearly: "structure enters into the constitution of the agent and from here into the practices that this agent produces. Structure is thus a significant *medium* of the practices of agents....Structure is also, however, the *outcome* of the practices of agents" (Stones 2005, 5). Stones emphasises the words Giddens himself uses (Giddens 1984, 25), but he might well have also linked the practices of agents to their *doxa* and *habitus*. The separate identity of agent and structure is both maintained and lost. They are not simply separate and independent but working together. They are not fused together but pervade each other; a relationship capable of constraining and enabling action while the structures unendingly mutate. They are super-complements.

The view taken in this thesis is that anything with the potential to be so enveloping as structure cannot at the same time be a mere memory trace, with no near-permanent existence (Giddens 1984, 377). But memories need not always be at the front of the mind. It may require time and effort to remember a structure, as with the necessary arrangements for infrequent and irregularly held ceremonies. A memory can evolve even though the original occasion generating the memory is fixed in time. Paul Connerton refers to "collective or social memory" and notes how it can diverge if it is communicated across generations (Connerton 1989, 1 and 3). A divergent memory could well lead to consequences other than those intended by whoever created the original, now remembered, event or place. A partial or

inaccurate memory is an evolved memory but still a potentially powerful structure.

Most social scientists and archaeologists have for long accepted a definition of structures that would be similar to that proffered by Johnson as “enduring cultural or social relations” (Johnson 2010, 243). For similar reasons to those offered elsewhere for retaining existing clay pipes typologies (see Chapter Two: ‘Methodology’), it is very difficult to accept a redefinition of a term already widely understood and accepted.

Structures are long-term, significant contributors to the shape of society – ‘enduring’ yes, but not stable or fixed. They change through their interplay with agencies. However, individual agents may be aware of their force only intermittently, briefly or occasionally and, for a period of time, see them as rigid and immutable. They exist long enough to bring both benefit and limitation to individual agents. Indeed one structure could be beneficial to one agent and inimical to another. Either agent could be unaware of how differently a structure may be perceived by other agents. Some agents may be unaware of the presence of a structure that is very apparent to other agents. That does not prevent structures remaining a considerable and evolving influence on society over time. The view presented here is a reasonable compromise which enables structure to be understood both conventionally and, by acknowledging the fact of potential change, in the sense Giddens creates.

Bourdieu introduces some new concepts and approaches, for example the notion of *habitus*. What can be taken from Bourdieu here is his idea that our dispositions to act in certain ways (‘practice’ is the word he uses) have been acquired by experience of life (maybe socialisation is a better word). These dispositions could change with time, as what is seen as normal and self-evident (i.e. *doxa*) changes. The dispositions will influence and create history which enables the culture to evolve, both for those building the history and for new members who will join that society. But, as with Giddens’ work on structures, Bourdieu on *habitus* offers some challenges. There is no single

unequivocal statement of what the term means. Definitions taken from Bourdieu's writings illustrate how they may stress different aspects of the phenomenon of *habitus*: durability and creativity; the regularisation of inventiveness; the long-term roots of *habitus*; the perception of normal behaviour; the circumstances in which it is acquired and demonstrated and lastly introducing the idea that actions emanating from *habitus* could be shared (respectively, Bourdieu 1990, 72, 78, 78, 79, 95 and Bourdieu 1977, 54). Doubtless further examples could be found. It is not that these definitions conflict, rather that none is complete.

Bourdieu too can be uncertain in his use of key terms such as 'structures', which he uses both to cover both structures of society and those of *habitus*. At times it is almost as though he has absorbed much of Giddens' duality of structure without using the phrase because the *habitus*-employing agent and structure of society are so intertwined, as this extract indicates:

> "the structures characterizing a determinate class of conditions of existence produce the structures of the *habitus*, which in their turn are the basis of the perception and appreciation of all subsequent experiences.
>
> The *habitus*, a product of history, produces individual and collective practices – more history – in accordance with the schemes generated by history." (Bourdieu 1990, 54)

Another interesting point to note here is that Bourdieu refers to the practices of individuals and of collectives (which he later expands to refer to individual *habitus* and to class or group *habitus* – Bourdieu 1990, 60). This has been developed by others, notably John Barrett, who takes the notion beyond space and into time. He writes:

> "Practice necessarily requires the presence of an agent, the active participant, although reference to

> the agent is not necessarily reference to the individual. Certainly individuals act as agents and certainly agency operates through bodies of individuals, but agency must also include the operation of collectives extending beyond the individual's body and their own lifespan.....The individual does not now become the basic unit of our analysis, nor are we primarily concerned with individual motivations, nor do we begin analysis with a consideration of an individual's action, nor do we see societies as being nothing more than the cumulative product of individual actions". (Barrett 2001, 149)

While there are qualities of agency suggested here that will be accepted and used later in this thesis, one benefit of study within historical archaeology is that individuals may sometimes be identified and some of the circumstances of their lives scrutinised. Sometimes a study of individuals can throw light on the situations experienced by wider elements in society. This theme is developed in the use of case studies in this thesis.

It is also essential to recognise that the actions of individuals or of groups need not have the consequences anticipated. Perhaps this reflects the fact that our attempts at rational decision-making, although founded on our *habitus,* are made rapidly, with partial knowledge and are affected by the actions of others both known and unknown. Bourdieu takes as his example a tennis player deciding whether or not to rush the net. He expresses the process of decision taking thus: "the conditions for rational calculation almost never obtain in practice where time is scarce, information limited, alternatives ill-defined and practical matters pressing...Agents....practically anticipate the immanent necessity of their world" (Bourdieu 1988, 783). This could help explain why the outcomes of human action are often unpredictable, even if humans are knowledgeable, to a certain degree (Giddens 1984, 281).

Giddens believes it is crucial to study how unintended consequences are "interlaced" with the forms of knowledge held by the agent (Giddens 1989, 299). What is certain is that without the instigation of an agent, there can be no change. Giddens goes to some length to show that human agency "concerns events of which the individual is the perpetrator...Whatever happened would not have happened if that individual had not intervened". This is true, even if the agent was mistaken in thinking that what (s)he did would produce an intended result. Giddens emphasises the difference between "what an agent does from what was intended" (Giddens 1984, 9-10). There needs to be no proximity between action and consequence: a phenomenon Giddens refers to as "time-space distanciation" (Giddens 1984, 259).

Working for intentional social change seems possible for Giddens, even if the desired change is not achieved. He divides resources available for agents into two sorts: authoritative and allocative resources (discussed in this thesis on page 124, with a pipe-relevant illustration on page 125). He sees these as "structures of domination" (Giddens 1984, 258) which, in reproduction, generate power for change. This provides what might be termed permissive power: the exercise of power, and the use of resources, provides potentially effective agency that could permit change. With Giddens the agent is in a constant state of reflexive monitoring, which he describes as a "chronic feature of everyday action" (Giddens 1984, 5).

There is some superficial similarity to the way in which Giddens approaches resources in Bourdieu's separation of capital into economic, cultural and social capital (Bourdieu 1984, 108). Social strength is with those who hold the greatest amount of these capitals. These forms of capital are in themselves structures; the more that is held will permit the possessor to enjoy greater dominance in society. However, the way to acquire capital is largely through familial and institutional sources – but these themselves are constrained structures with access often limited by birth. Members of society, regardless of strata, acquire the *habitus* which tends to lead to a persistence of their place in society. Bourdieu argues this extends to the practice of birth control:

“procreation subordinated to the imperatives of social reproduction” (Bourdieu 1984, 338). Mobility through agency is possible but limited, with the dominant group(s) in society tending to retain their position. Allen and Anderson (1994, 71) express this as the “structural elements (determining) the opportunity set within which individual actors live out their lives”. Bourdieu quotes his own argument from *Distinction* when arguing in *Vive la Crise* “that members of the dominant class, being born into a positively distinguished position, appear as distinguished simply because their *habitus*, as socially constituted nature, is immediately adjusted to the immanent requirements of the social and cultural game” (Bourdieu 1988, 783).The lives of people at each level in society are shown by their differing patterns of consumption. These Bourdieu delimited by the tastes revealed in such areas as the level of education, appreciation of music and films, and consumption of foods. The dominated agents may well dismiss high status features of life as “not for the likes of us” (Bourdieu 1984, 473).

Although no record can be found of Bourdieu using the term ‘structuration’, it should be assumed that both Bourdieu and Giddens are essential in their contributions to structuration theory; perhaps the appropriate word is that they form a ‘duality’. The fact that Bourdieu and Giddens do not develop their arguments in an identical way is to be expected. They were never overt collaborators and arrive at their diverse conclusions through different routes. This is a feature of structuration theory – there are indications and arguments but no summative or integrated whole. In consequence, the researcher is free to pick, choose and develop the theoretical positions propounded and make them her or his own. Kate Giles, who uses structuration in her publication on guildhalls in York, believes that “the combined use of Giddens’ structuration theory and Bourdieu’s idea of *habitus* as a theoretical framework is neither radical or new” (Giles 2000, 9). Nonetheless, the adoption of a theoretical stance starting from the work of Giddens and Bourdieu and looking at structure and agency is a focus new to the studies of clay pipe makers.

The Structures Most Relevant to Clay Tobacco Pipe Makers

So what constitute the discernible structures that may be found to affect the lives of pipe-makers and, in turn, be affected by them? What also might represent the social medium in which pipe-makers live? This following list is not exhaustive, nor does it suggest that every structure will apply equally (or at all) to every pipe-maker. The structures exist autonomously and are in a continuous state of being created and recreated (i.e. they are in a continuous state of structuration). Structures themselves may inter-relate, for example those with a clear emphasis and origin in economics. They need not constantly be at the forefront of an agent's mind. None of these is likely to be of very short duration, indeed the dynamic of evolution requires time. All of these may be structures influencing pipe-makers, although the last three may be of least significance and will receive limited attention in this thesis:

1. The changing mix of allocative resources – such as raw materials, technology, transport, storage, and housing.
2. Fluctuations in price levels, in the tastes of consumers and in the behaviour of competitors.
3. Rules and laws – emanating amongst others from the Worshipful Company of Pipe-makers, and from Parliament, local cities and towns. It includes any regulations applied to apprenticeships.
4. Community affiliation – local Councils, Guilds, Trades Unions, etc. This looks more towards inter-personal relationships within organisations rather than at the institutions themselves.
5. Kinship and family membership. Arguably the race and sex of others should be excluded as structures as neither can be influenced by an agent, but over generations the composition of kinship can change, and gender is socially constructed. Kinship and family membership are best seen as the *current* qualities of a structure capable of influencing the effectiveness of the agency exerted. However, the gender and ethnicity of the agent are more qualities of agency rather than of structure.
6. Class – social mobility and status; standard of living.
7. Availability of capital and exposure to bad debts.

8. Access to education and training.
9. Locations and physical environment.

and perhaps of less importance in this particular study:

10. Systems of offering symbols of power – such as Civic or Church roles. Inherited titles.
11. Social rituals and expectations – e.g. regarding inheritance, privacy, independence, and aging. Again, the aging of oneself or of others is beyond the agent's influence.
12. Threats to life and property: health and physical attack.

Although this list may be a helpful 'memory-jogger', as might be the work on agents (see pages 98 and 99, below), it is essential to remember Johnson's warning. He advises the avoidance of "recipe book approaches to agency (or any other aspect of archaeological interpretation for that matter)" (Johnson 2000, 214 – his parenthesis). As he notes, such approaches are blind, naive and insensitive.

The Spiral Model of the Structures an Agent Experiences Over Time

So far structures have been viewed conventionally. Many debates over agent and structure suggest agents acquire characteristics and simultaneously have an impact on society that may alter that society in an intentional or otherwise manner. The agent now experiences a new society and may modify his or her behaviour according to the state of knowledge and the intention of the agent. It is possible for the agent to change as a result of his or her agency while the structure itself is unchanged. The relationship between agency and structure is unlikely to be one of stability.

In the new model presented below, an exploration is undertaken of illustrative structures present in the pipemaker's life. The agent, in working to achieve his/her intention, experiences many and different structures, some intermittently and others continuously. (S)he is the same agent, but the nature of the agency changes as the task continues and (s)he meets different structures that are created as the business progresses. This view is

particularly true when exploring named individuals (pipe-makers, for example) rather than using the more generalised approaches that wider studies require. Perhaps this is best thought of as movement along a spiral where a pipemaker is dealing with one dominant structure at one time and with a succession of others later. The agent, meeting a structure, makes a decision, seeks to give it effect, may discover the consequences of actions taken, reviews the situation and takes fresh action which leads to new consequences, and so on. The following highly simplified scenario may make this idea clearer.

A pipe-maker (here, male) seeks to establish a business in a town. He encounters a number of structures, some singly and others in multiples. All the structures are set against the passage of time. The pipemaker experiences the structures as a series of events:

- On the completion of his apprenticeship, the pipe-maker is admitted to the Freedom of his town and can commence work on his own account. The structures experienced are the local Guild requirements.

- His trade grows slowly and the pipe-maker can afford to marry. The social norms for marriage are the structures.

- On the death of his pipe-maker uncle, he inherits his decorated pipe moulds, enabling a diversification in the range of pipes he can make: he is able to alter the moulds to show his own name. On this occasion the structures are kinship and inheritance rules.

- His new pipes are well received locally; in consequence, an innkeeper places a regular order for pipes. The two structures experienced are consumer preference and the capitalist system.

- Given the existing technology, a new and larger kiln is required to meet increased demand. The pipemaker has to negotiate a loan to cover the costs. Here the structures are the sources of finance available.

- Access to pipe clay becomes easier following the improvement in navigability of a local river. Clay is now cheaper to obtain. This reflects the structure of suitable means of transport for his main raw material.

- Higher demand means that he needs help in his workshop; the pipemaker accepts an apprentice and the business continues. The structures represented are the demand for pipes and the availability of workers.

Figure 7, below, represents this history:

DIAGRAM ILLUSTRATING THE CONTACT SPIRAL OF STRUCTURES AND AN AGENT OVER TIME

Examples of STRUCTURES	Consequential EXPERIENCES for the pipemaker
The demand for pipes and the availability of workers	Higher demand means that he needs help in his workshop; the pipemaker accepts an apprentice and the business continues.
Provision of suitable transport	Access to pipe clay becomes easier following the improvement in navigability of a local river. Clay is now cheaper to obtain.
Sources of finance	Given the existing technology, a new and larger kiln is required to meet increased demand. The pipemaker has to negotiate a loan to cover the costs.
Consumer preference and the capitalist system	His new pipes are well received locally; in consequence, an innkeeper places a regular order for pipes.
Kinship and inheritance rules	On the death of his pipe-maker uncle, he inherits his decorated pipe moulds, enabling a diversification in the range of pipes he can make: he is able to alter the moulds to show his own name.
Social norms for marriage	His trade grows slowly and the pipe-maker can afford to marry.
Guild requirements in a town	On the completion of his apprenticeship, the pipe-maker is admitted to the Freedom of his town and can commence work on his own account.

Figure 7 *Artwork by James Etherington*
University for the Creative Arts, Epsom

The pipe-maker has a view of his business which is set alongside the interaction with the structures and may change with time. He has had to deal with a number of structures. These are shown in *Figure 7* as a simple sequence of experiences over time.

In reality, however, not only will the agent have to deal with a succession of structures relating to his business, simultaneously he will have to handle different tasks in different areas of his life. All will have their own spirals of discovery and evolving developments. Perhaps it is more realistic to view the pipe-maker as facing a tangle of coiled springs which he needs to separate and respond to as his complicated life continues. To ease this, the pipe-maker may focus on one issue and one structure at a time. So too, in exploring structures, it is necessary for archaeologists to be able to view each one in isolation. Without this facility, confusion will reign. In addition, the multiplicity of structures makes more difficult any attempt to comprehend the totality of ancient and complex lives and their attendant and confused features and makes the detection of causality more challenging. Clearly any attempt to understand the entire tangle of life-features facing people in the past is quite beyond the capabilities of today's archaeologists. Frequently the fact of necessary simplification seems to have been ignored in writings about structuration. So often it seems that an agent faces just one issue with structures that may be inspected one by one. Of necessity this may be unavoidable, but this does take the archaeologist away from the reality facing the agents and must be emphasised as a necessary and fundamental assumption.

There is another issue here. Given that society and structures are in constant states of potential evolution, the perception of an artefact or social situation at the beginning of its life may be very different from the perception when the artefact is discarded or the situation ended. It is hard to assess a situation or artefact if the ambient society is changing, particularly if this leads to a change in what people see as what is taken for granted (i.e. a change in *doxa*). The question is, with which society does archaeology identify the situation or the artefact – early in its existence, at a mid point, at the end of its time, or

conceivable as a longitudinal study throughout its biography? There has to be a value-judgement taken – the criteria for which will need stating and, perhaps, defending. In the model presented here, the decision to make a diversified range of pipe shapes could be taken some years before the consequences were clear - society is likely to have evolved over that period. Another example would see changes in local demand for the pipemaker's clay pipes over time. Demand might increase if new housing was erected locally, or it could fall if new pipemakers moved into the area, or if the inherited bowls came to be seen as out-of-date.

This spiral model implies alternation of focus from the viewpoint of the pipemaker who may well feel that life is 'just one thing after another'. The spiral is therefore in disagreement with views others have expressed. For example, Rosemary Joyce and Jeanne Lopiparo argue that structure and agency do not alternate (2005, 365) and that "structuration is the simultaneous exercise of agency and the constitution of society" (2005, 365 and, 366). Furthermore they discuss the "risks of allowing us artificially to separate structure (interpreted as institutions) from agency (interpreted as action)" (2005, 305 – their parenthesis).

However, the idea of a succession of experiences is a view shared by Taylor, who accepts that "structuration has the ability to recognise successive phases in the socio-archaeological record" (Taylor 2003, 134). Taylor's position does give researchers space to explore what has changed, and why it has changed rather than be faced with the seamless, on-going, integrated, evolution of structures with agents that Giddens suggests. Without developing the point in detail, it is interesting to see that Taylor goes further to raise the possibility of authoritative resources being put in a 'hierarchical placing' (2003, 141) and so, one assumes, be available for separate study and assessment by the agent.

The debate over the location and pace of agency continues (for example, see Mytum, 2013). This thesis takes the view that arguments which rely on immediacy – simultaneity in the case of Joyce and Lopiparo (2005, 365) –

present a situation which cannot be held stable long enough to permit archaeological study. Equally, life situations changing relatively quickly give limited scope for reflective thought and deliberative action by the human agent. The agent may be forced to prioritise when facing diverse structures. As they are not fixed, an agent may discover that any structure set briefly to one side is changed by the time (s)he is able to respond to it. However artificial it may be to look at structures being experienced in ordered sequence, it seems better to use a recognisable but flawed model than to work with one which expects a confusing state of constant flux. If a structure evolves so quickly that it may not be defined and explored, any evidence for its existence seems unreasonably thin.

The Hoopla-Pole Model of an Agent Fixed in Time/Space.

Unlike the spiral model, a second, original model of structures freezes time but acknowledges the variety of structures impinging on an agent at one time. The agent is aware of the goal but progress towards achievement cannot be measured as time does not change. The purpose of the model is to explore the constraints and opportunities available to the agent.

Figure 8, below, uses the model of a hoopla pole around which rings have fallen. In the context of pipemaking, the agent (female, here) is represented by the central pole, while the rings stand for structures. The agent is engaged in pipe making, in one place and time. She is nonetheless subject to the influences of five different structures represented by rings below. Those structures suggested here are:

Location – shown as Structure 1 – the purple ring
Market size – Structure 2 – the red ring
Bad debts – Structure 3 – the green ring
Family expectations – Structure 4 – the brown ring
Limited availability of journeymen – Structure 5 – the yellow ring

Some structures may be felt acutely (here structures 3, 4 and 5); they touch the agent and are seen by her as significant influences on the business. They could well be influencing the agent in different directions and be perceived as

conflicting constraints or opportunities. The impact of structures 1 and 2, although real, is perhaps less obvious to the agent at this time. In addition, there may be other structures which are affecting her without her realising, for example the imperceptible wearing-out of her pipe moulds. Others might be powerful but unknown; maybe her journeyman has been approached by a rival pipemaker offering higher wages. Here the structure is a competitive labour market in which there is agency exercised by another employer. Archaeologists working outside the period under study may be able to discern and tease out structures of which the individual agent at the time might not have been aware.

This model may prove to be the pattern of structures pursued in research in Historical Archaeology, as a good deal of the evidence available will be of the snapshot variety. The data often are fixed in time/space, as with probate inventories, commercial directories and census records.

The spiral model showed the agent meeting a succession of structures relating to a single ongoing project; the hoopla model shows the structures facing the agent at one moment. In reality the two models need to integrate to show the pressures under which the agent makes decisions. The hoopla model, shown on the next page, could be conceived as a section through the spiral model showing additional structures present at any one time.

DIAGRAM SHOWING THE AGENT AS A HOOPLA POLE AMID STRUCTURES

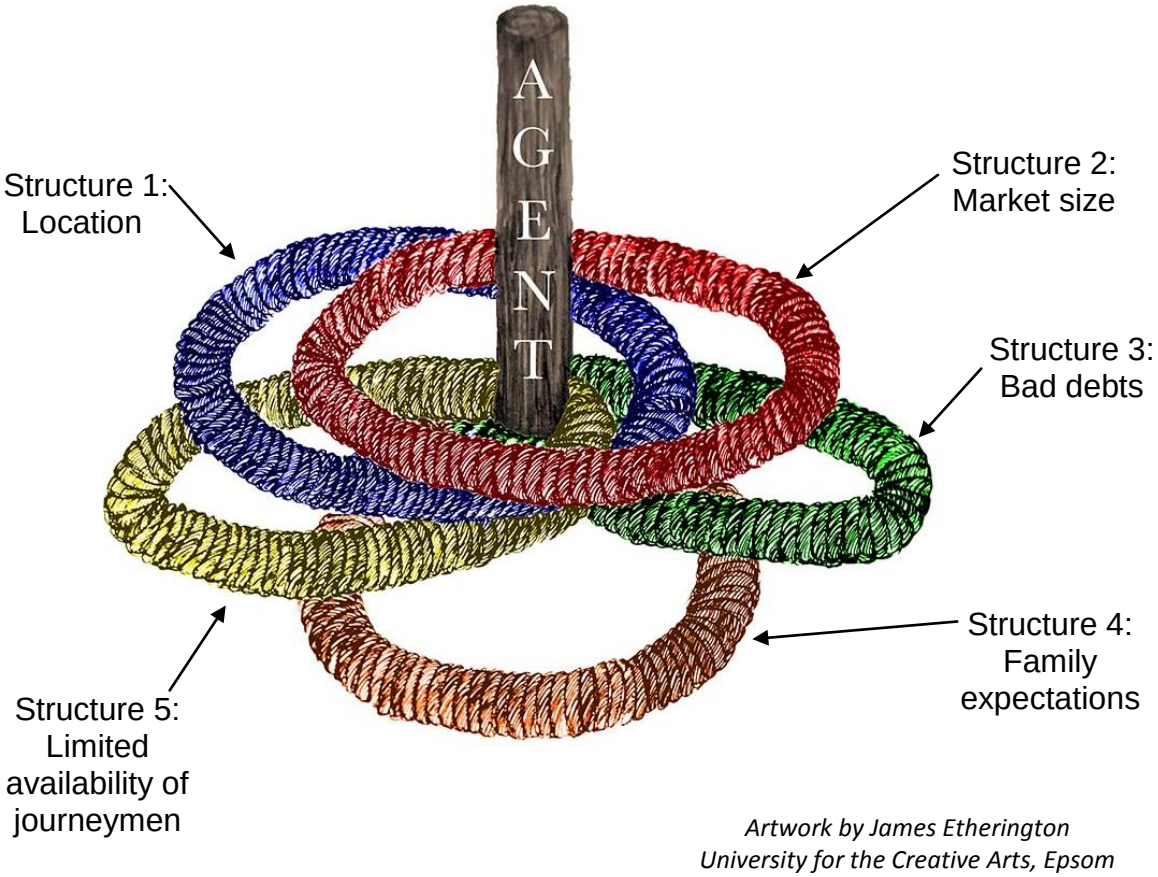


Figure 8

In using these models, it might be necessary to use a 'reverse analysis of structures' or postdiction. This seems likely to be a common point of perspective for archaeologists. Here the outcome is known and the details of actions taken by the agent can be inferred. The important question that can be posed is 'What influenced the agent to act in the way(s) she or he did?' This approach will permit an identification and assessment of the more significant structures.

Agents and Agency in the Pipe-Making Industry.

Dobres and Robb reinforce the difficult nature of the double evolution of agent and structure when they write of "two especially vexing questions: first, how do structures outlive the agents who create, move through and change them? and second, how do short-term events contribute to longer term processes?"

(Dobres and Robb 2000, 6). Agents learn from society as they re-make society and themselves. This may alter the effectiveness of their agency. As agents and their society transform, it may be quite difficult to identify what the agency is (and what resources were available and what the outcome is) even if the agents, like some pipe-makers, are known by name, in time and space.

It is important to remember that the agents are “not uniform automatons, merely reacting to changes in the external world” (Dornan 2002, 304). Some agents are imbued with greater power than are others. Andrew Gardner suggests emperors as examples of the powerful (2004a, 35). Power can also be located in the police, schoolteachers, politicians, priests and others. However, power in the case of these examples comes from their office, at least initially. Perhaps the office represents a structure while the office-holder can exert different degrees of agency. Maybe one could suggest the term ‘employment’ as an alternative to ‘office’, but someone who is employed may lack the status (and perhaps apparent power) of someone holding office. Individual pipe-makers may have relatively little power; their significance to archaeologists lies more in the widespread distribution of the highly visible and durable archaeologically significant product they made separately but which may merge in the archaeological record. Pipemakers tended to act in isolation or in small groups, perhaps a master with an apprentice and a flexible number of journeymen. The Worshipful Company, based in London, was never powerful; the apprenticeship system was to disintegrate slowly during the lifetime of the pipe industry. The emphasis in this thesis is on the individual worker and his or her agency and the structures within which they worked. This does not imply that there was not contact between pipemakers, sometimes over long distances (see the case study of Henry Phillips on pages 18-20 and of the Burstow family on pages 165-168 for examples), but it would be wrong to see them often operating as a long lasting and effective collective.

Elizabeth M. Brumfiel reminds us that agent-centred studies “can render past actors more believable and supply accounts of the past that are more true, relevant and interesting than studies where humans are the passive victims of dumb luck or circumstance” (Brumfiel 2000, 255). In historical archaeology, it

is possible to deal with named individuals who need not become the “faceless blobs” of Ruth Tringham’s people of prehistory (Tringham 1991, 94). This is certainly true for this study of the Kent clay tobacco pipe industry. There is wisdom in looking for identifiable agents and seeking to discern any separate agency, but it is necessary to keep in mind that one individual may not have the power to change society unless his/her agency is in some way combined with that of others.

The effectiveness of agents will be improved through an ability to communicate with other agents across time and space – travel, speech and literacy bring a significant advantage to agents. John Barrett and Jennifer Dornan, separately, suggest that the individual agent may lack the effectiveness of some form of combination of agents who share a common purpose: “the individual is also often viewed as an insufficient unit of analysis” (Dornan 2002, 315). As noted earlier, agency can be achieved through “the operation of collectives extending beyond the individual’s body and their lifespan” (Barrett 2001, 149). Indeed Barrett goes further: “the individual does not now become the basic unit of our analysis (of agency)” (Barrett 2001, 149). There is evidence that clay tobacco pipe makers did operate in concert occasionally, for example in guilds and in petitioning Parliament, so the issue of collectivised agency will also be considered.

What can be assumed about agents? Gardner, writing of Bourdieu, sees the agents’ social identities differing in terms of economic, social, cultural, and symbolic capital and also in terms of their dimensions such as gender, age, status, and ethnicity (Gardner 2004, 7). Occupations might be added to the dimensions. Given that they are individuals, and that all are different, it is more difficult to list possible qualities of agents than it was to list possible examples of structures. These qualities overlap and several may be held or used simultaneously. Similarly, activity and outcomes may overlap. Feedback may come at any time and influence what an agent does. Some characteristics are fluid because “people have changing constellations of (the categories making up social identity)” but some are fixed “to provide some structure and predictability to social interaction” (Gardner 2004, 40-41).

So, what can be assumed about agents? Relevant inclusions in my list of possible features are that pipemaker agents:

1. Have goals and intentions which may limit and be limited by their perceptions of structures. Conceivably, the agents will be unaware of some structures, even if the structures are affecting the agency of the agents.
2. Seek to act rationally and strategically with the intention of fulfilling their aims. Some actions have unintended consequences. Some outcomes are much delayed (even to the point of becoming clear well after the death of the agent). This assumption of individual rationality owes something to the ideals of the Enlightenment. Alternative values may be considered, for example those stemming from capitalism. Both ideologies were current early in the history of the clay tobacco pipe workers.
3. Are actively involved problem solvers in the social world.
4. Adapt to new perceptions and to changes in structures – and so are capable of learning. Structures bring both opportunities and constraints.
5. Have certain dispositions – learned and deep-seated values and beliefs (Bourdieu's *doxa*) (Bourdieu 1977, 164). These are slow to change and include that which is taken for granted or as self-evident.
6. Have a general disposition or *habitus* showing the ways in which agents interact with the world – this is learned and changed by interaction with the world.
7. Know what works. These are shared cultural dispositions – Giles sees this as *habitus* embodied in groups (Giles 2000, 11).
8. Are to some extent self-conscious and self-aware.
9. Can communicate with other agents – to cooperate, fly, fight or respond in some other way. Actor networks may be the site of agency.
10. Possess power, to a greater or lesser extent (without it they cannot be agents). There is both <u>power over</u> something that will directly affect others, and <u>power to do</u> something that may or may not affect others. Both uses of power may be perceived by others as a structure in their lives. Power exerted may lead to resistance, even

to conflict. The extent over which power may be exerted is an additional factor here.

11. Change society by their action and be changed by society.
12. Are situated and operate in time and space.

In addition to all these features, there are what Gardner termed the individual dimensions of gender, age, status, ethnicity, etc.

Throughout this list, it is important not to confuse the agent with agency. In this research, it may be relatively easy to find agents and to recognize the actions they take, but difficult to identify their intention and perhaps hard to discern the resources they had available. Dobres and Robb refer to the term 'agency' as being used with "slippery imprecision" (Dobres and Robb 2000, 3) and being a "notoriously labile concept" (Dobres and Robb 2000, 8, quoting Sewell, 1992). Agency is performed by agents; it is not something in their possession. It is conceivable that at times agency can only be performed by groups of co-operating agents. Agency is the means for creating change. For agency to be effective it needs to use power. The power need not be utilised at all (and so the agency remains as unrealised potential). Many writers, including Giddens, note that agency may not achieve what the agent(s) intended (Giddens 1984, 9 – 14).

Giddens suggests the time required for agency to take effect when he writes that it "does not refer to a series of discrete acts combined together"; it is "a continuous flow of conduct" Giddens 1979, 55). This seems problematic. Not only must agents know what they want to achieve, and how to proceed, they need to know when to act. In short, "agency is social and relational and therefore situational" (Gardner 2004, 103).

But agency does not simply exist at the behest of agents; it needs a medium in which to work. Society may change independently of the action of pipemaker agents, but reflect the agency of others. Technical changes in the production of material culture and the impact of forces of nature may intervene and give advantage or create difficulties as a pipemaker pursues his/her own interest.

Arthur Joyce, reflecting Giddens' notion of the duality of structure, notes the need for agency to be considered alongside structures: "Agency cannot be considered apart from its structural context. Structure consists of principles and resources that both enable and constrain agency, such as religious belief or prestige goods" (Joyce 2000, 71-72). While Giddens was looking for the duality of structure (and agency), others would go further to see there being little difference from the individual's viewpoint. Dornan asks, "if we are looking for agency within widely shared and repeated practices, how is that different from structure and how do we locate agency within those repeated practices?" (Dornan 2002, 315). The key set of repeated actions required to make clay pipes might be interpreted as reflecting agency (based on the maker's decision to produce pipes). Equally, these almost immutable actions may be interpreted as a structure in themselves.

Conclusion

This chapter has considered structure and agency, and made clear why the malleable and adaptable body of structuration theory should provide an appropriate approach from which to study the Kent clay tobacco pipe industry. It has shown how this research has benefitted from the work of others who have made the attempt to use structuration in their own researches within archaeology. Two new models have been proposed that reflect quite closely the likely experience of structures by pipemaker agents. The models may prove particularly helpful in the situation of small-scale production in the post-medieval era where occasionally it is possible to view separate families and named individuals.

The approaches of the next three chapters will present a large corpus of research data on the clay tobacco pipe-making industry of Kent in three defined periods. This chronological approach will be shown to reflect the changing nature of the industry across time and the changing structures within which the individual pipemaker agents operated. Where possible, comparisons will be made to the development of the industry elsewhere in the UK. Each chapter will apply the analysis offered by structuration theory as interpreted in this chapter.

CHAPTER FIVE
STRUCTURE AND AGENCY IN THE EARLY INDUSTRY: KENT PIPEMAKING *c*. 1600 TO *c*. 1760

Introduction

This chapter will explore the lives of the earliest pipemakers in Kent and cover the seventeenth century and the first half of the eighteenth. It will refer to individuals by name and provide a wider exploration of various key common factors in their lives. Finally it will analyse what might be concluded about the agency of the pipeworkers and review some of the more significant structures with which they relate.

A Time of Social Change.

Almost any era can claim to be a time of change. This can be said for the period between 1600 and 1760 in Kent. It was a time of political strife beginning with the domestic upheavals of the Gunpowder Plot, passing through the Civil War and moving on into a time of an increasing and larger scale focus on foreign threats and opportunities. It was a time menaced by plague and fire (as in London in 1665/6). The population in Kent grew steadily from *c*. 130,000 in 1602 to *c*. 184,000 by 1760 (Armstrong 1995, 11). The distribution of population remained dominated by agriculture and such associated industries as woollen textiles. But this was a time when towns were growing: London at least doubled its population to 600,000 between 1600 and 1750 (Overton *et al* 2004, 11). The influence of London and of the major towns in the county became clearer through the seventeenth and early eighteenth centuries. Road transport links were not extensive or reliable (witness the fact that the first Kentish Turnpike Road, which linked Sevenoaks to Tunbridge Wells, was not built until 1709), but sea and river transport was growing in importance. Immigration from Europe was significant in some parts, notably around Sandwich and Canterbury (Edwards 2004, 86-87). The time around 1760 marks the start of the Industrial Revolution in the UK – a time when new technologies and working practices revolutionised production in many industries (Southgate 1958, 115). These had little impact on most of the crafts in Kent, or on the manufacture of pipes; explaining and accounting for this and noting the consequences will form major parts of the next two chapters.

The Earliest Tobacco Pipes

The pipes made before 1740 cover the pipes corresponding to AO type 24 or earlier (Atkinson and Oswald 1969, 177-180) and Os types 6, 9, 10, 18, 19, 20 21, 25 and 26 (Oswald 1975, 37-41). Of the 4094 pipes recorded in Kent as a preparation for this thesis, some 1467 pipes were made in moulds created before about 1740 but only forty-five of them are clearly marked with the maker's initials. Additionally, thirteen show incomplete or partially lost initials. Simply having initials does not mean a maker can be identified with confidence as frequently, at any one time, makers with the same initials were in business, occasionally in one location. For example, John Bame, John Blackman, John Booth and John Bourne were all active in Canterbury at some time between 1720 and 1760.

The clay pipe typologies are imposed by archaeology on the evidence of pipe remains recovered. Examples of any one pipe type are found in contexts of similar age. This indicates at least some degree of informal co-operation, perhaps a recognition of the actions of other traders and the perceived need to keep step with developments in pipe design. Alternatively the agency responsible for this degree of co-ordination might have been orchestration by makers of pipe moulds who may have been better placed than pipe makers to discern changes in pipe fashion.

The location of pipes dated before the mid eighteenth century does provide some indication of where pipes were made and, with greater certainty, of where they were discarded. Pipes of this age have been found in Canterbury, Maidstone, the London fringe, along the north and east coasts of Kent and, infrequently, at sites inland such as Tonbridge. Nonetheless, the information regarding location of early pipes is patchy as it reflects the sites explored by various academic bodies, professional archaeological companies, local amateur societies, and casual finders. There has never been a Kent-wide search specifically for clay tobacco pipes; however, there is a good match between known locations of early pipe-makers and the places where pre-1760 pipes have been found.

The First Documents

The erratic availability of artefactual evidence for seventeenth and eighteenth century pipes makes it necessary to focus on the documentary evidence which was created within a few years of tobacco arriving. One of the earliest examples was James I: *A Counterblast to Tobacco,* promulgated in 1604. The *Counterblast* makes specific and disapproving reference to pipes as items of vanity, uncleanness and shame (King James I, 1604). Fifteen years later, a Royal Charter of Incorporation was granted to the Tobacco Pipe Makers of Westminster giving control over tobacco pipe production in England and Wales. This suggests there was a degree of co-operation and a recognition of competition at an early stage in pipemaking. In seeking a Royal Charter, there was evidence of common agency being exerted, at least by the makers in Westminster, and of their intention to exercise power and control.

The very fact of the existence of such documents stresses the fact that tobacco smoking became well established speedily, despite royal reluctance. This was a nationwide adoption. The inference can be made that pipe making spread across the country and was taken up particularly rapidly in London and those counties close to the capital. Oswald (1975, 103) has shown that London pipes dated 1640 or earlier have been found widely across England, causing Oswald to conclude that “the London trade was dominant over the country up until *c*. 1640” (Oswald 1975, 102).

Setting Up Early Businesses

The Diary of Thomas Cocks (covering the period from 25 March 1607 to 31 December 1610), privately published in 1901 by J Meadows Cowper, provides the earliest written reference to pipe smoking in Kent. It predates the record of the first known named Kentish pipemakers by thirteen years. On 18 May 1609, Cocks “payde for a peece of lether to wrappe my tabacco in”; surely one of the earliest references to a tobacco pouch. The leather, unlike the pipes, might have many potential uses and was sold without a dedicated purpose in the mind of the seller. Cocks’ repeated purchases of pipes were for artefacts made for sale by other people and for a specific purpose. Clearly smoking, using ready-made

pipes, was an accepted and repeatable activity in the first decade of the seventeenth century in Canterbury.

The question arises as to who made these very early pipes. Some have suggested that the very earliest pipes were made of organic matter – walnut shells and straws (Le Cheminant 1984, 28). It is arguable that clay pipes originated in the near continent. Le Cheminant quotes Oswald who cites a Dutch woodcut dated 1587 which shows a man smoking a spurred clay pipe (Le Cheminant 1984, 33). Although Oswald also refers to hand-made pipes which might have been the creation of individual smokers, it is very unlikely that a widespread adoption of smoking could have been made without easy recourse to retailed pipes made for the purpose of smoking. Pipes were in demand, to the extent that they could be shared by as many as four men, claims Barnaby Rich in his *Irish Hubbub* of 1622 (quoted by Hilton-Price 1900, 224). It seems very likely that specialist pipemakers must have existed very early in the history of smoking in Kent. Thomas Cocks appears to have had no problem buying pipes in Canterbury in 1607; sometimes he bought them with tobacco but equally frequently they appear as a free-standing item in his Diary. In considering the source of workers for this new industry, it is worth examining the nature of the industry. It does not require heavy capital investment. A pipe kiln need not be large; as recently as the nineteenth century the kilns in Kent could be constructed indoors or in a small shed or lean-to (John McLean 2007, 28). Robert Campbell, writing in 1749, estimated that it would cost £20-£50 for someone to set up in business as a master pipemaker. This was relatively inexpensive compared to the costs of £50 to £500 he suggests for a carpenter or anvil smith (Campbell 1749, 331,333 and 337).

The earliest smoking pipes used in England crossed the Atlantic with the tobacco carried by seafarers returning after contacts made with the Native Americans. The Native Americans from the Chesapeake region had fired pipes using clay of various colours. Many of these pipes were decorated, often with images of animals and sometimes with a stipple effect (Magoon, 1999). Other pipes carried star motifs (Sikes 2008, 77). The understanding of the origin and sequencing of pipe shapes on the east coast is under debate (Magoon, 1999).

Once pipes arrived in England, they were subject to rapid changes in design and manufacturing methods. A preference for white clay was established, while the bowls were left plain and made much smaller than those created by the Native Americans. Like the pipes made in America, some of these pipes were hand crafted, but from the late sixteenth century the English pipes show a seam indicating that they had been manufactured in a two-part mould. Some of these white, small and moulded English pipes were taken to America and have been found in east coast sites used by the Native Americans (Trubowitz 2004, pp 146 and 156).

In South-East England, the moulds, probably initially of wood (see Higgins, 2012a), but later of iron or brass, would not be large nor require complicated detail in the moulding. The only recurring costs would be for fuel and clay. It would be possible for someone seeking to make clay pipes to add this to other employment. This would offer a degree of insurance for the incipient pipemakers – if pipe making proved unrewarding, the other occupation would still contribute an income. Arkell and Goose (2000, 79) note “how misleading single occupational labels can be since many (better off tradesmen and craftsmen) were also substantial part-time farmers”. It seems reasonable to conclude that, for a person seeking to work in a new and fast growing industry, pipemaking could have been attractive.

The Statute of Artificers, enacted in 1563, outlined the need for apprenticeships and indicated a seven-year indenture. Clearly at the start of pipemaking there were no masters who might pass on their craft. It seems reasonable to suggest that early pipemakers had some experience in the ceramics industry, not least to understand how to prepare and fire clay objects. There is little, if any, hard evidence for this conjecture. Almost certainly the earliest pipemakers would have been members of a guild and masters in a trade other than pipemaking. Perhaps they experimented with pipes to the point where they could accept an apprentice. This seems to have been the case elsewhere. For example, in York, Gabriel Westoby was recorded as a trunk maker in 1635 but by 1643 he was accepting two boys as apprentices when he was described as a trunk maker and tobacco pipe maker (Andrews 1987, 2). Roger Price, writing about Bristol

pipemakers, notes that Humphrey Partridge became the first Master of the Bristol Pipemakers' Guild, formed in 1651, but "how he had learned the skills of pipemaking is unknown: he never served an apprenticeship and it could be that, like his father, he had earlier worked as a carpenter" (Price 2012, pers. comm.).

There is a clue about the origins of early clay tobacco pipemakers in the State Papers of Charles II. In 1664, the Company of Tobacco Pipe Makers sent an address to Parliament complaining of "cooks, bakers, alehouse keepers and others (who) make pipes but so unskilfully that they are brought to dis-esteem" (State Papers Domestic, Charles II, 16 December 1664, see Green 1858 and 1863, 116). However, these cooks and others were infringing the Charter of the Company eighty years after the arrival of tobacco, so possibly a variety of trades produced the early clay pipes. It needs to be said that the Company writing this address would want to make a strong case in defence of the Company's interests. Pipe-making requires access to clay and to a suitable furnace so perhaps the threats to the industry were being over-stated. However, this again does demonstrate collective agency attempted by some pipemakers.

Early Named Pipemakers in Kent

In Kent, the record for early pipemakers is very limited. The first pipemakers recorded by Oswald were John Lyne and Thomas Tuck, both of whom were active in Canterbury in 1620 (Oswald 1975, 175 and 176). Unfortunately the details provided by Oswald are not always verifiable, but Thomas Tuck, appears to be a member of a family with at least six pipemakers working in the city during in the seventeenth century. In that century, twenty named pipemakers lived in Canterbury – thirteen are recorded in the rolls of Freemen. It is likely that the earliest pipemakers in Kent, who entered Freedom by serving an apprenticeship, were local people, as may have been those who obtained Freedom by patrimony or upon marriage. Clark and Slack (1972, 134) have shown that, between 1592 and 1642, 61% of all Kent apprentices came from a radius of 11 miles around the residence of their masters.

The earliest three pipemakers to become Freemen in Kent were all from Canterbury. Thomas Tucker (*sic*) in 1642 was entitled to this status by birth (his

father was a saddler). In 1651, Thomas King was made a Freeman by gift in respect of his poverty, while Thomas Knott took his Freedom in 1659 by Redemption (i.e. by purchase). This offers a conflicting picture – King was impoverished while Knott was prepared to pay in order to set up in business. That pipemaking could be profitable is suggested by the fact that there are records from the seventeenth century of makers' children following their fathers' trade as pipemakers. Usually, as with Nathaniel Herring (Jnr) and his brother William, this was after serving an apprenticeship with their father, but occasionally the sons were put to another pipemaker, at some cost (for example Robert Hornsby (Jnr) was apprenticed to William Booth of Canterbury for £7).

Using Probate Inventories

The most useful documentary sources relating to early Kent pipemakers are probate inventory records. There are extant eleven dated inventories for Kentish pipemakers spanning the period 1671 to 1747. Using only eleven inventories at first sight seems a very restricted database. Possibly more may be found. One hundred and sixty-five named Kent pipemakers appear to have died between 1671 and 1747. So the eleven inventories listed here represent a sample of 6.6% of the known pipemakers for this period in Kent. The industry at this time was dominated by the larger urban locations of Canterbury, Maidstone and Rochester. Together these account for three-quarters of the known pipemakers who died in the period covered by the probate inventories (1671-1747).

Many historians and archaeologists have found probate inventories a source of useable data. Two illustrations must suffice. Michael Reed, when publishing translations of Buckinghamshire inventories, noted that they are valuable in assisting the "recreation of almost every aspect of the daily life of men and women" and may also "throw (a flood of light) on the operations of sixteenth and seventeenth century commerce, manufacturing, agriculture and the growth of a consumer society" (Reed 1988, ix). Colin Phillips made a study of cordwainers in Kendall, using probate inventories extensively. He has found inventories for over 21% of the cordwainers who died in Kendal between 1575 and 1700. Phillips was able to reveal much of the structure of the shoe trade, the significance of bespoke manufacture, and even the seating preferences for the cordwainers at

work. He noted the importance of byemployment and the extent to which the ownership of a few luxuries was possible even though “Kendal cordwainers were amongst the least wealthy” (Phillips 1985, 31-46).

While inventories are a valuable source of information, they need some interrogation and to be read with some circumspection. There seems little guidance available to appraisers in creating the inventories, beyond the encouragement that they be honest and just (from Swinburne, *Briefe Treatise* (1635) quoted by Cox and Cox 2000, 29). Although inventories were usually completed shortly after the death, at times it is difficult to ascertain whether any damage, loss or deterioration to property occurred around the time of the trader’s death. It is possible that some items were removed from the houses of the deceased before the appraisals were completed.

Margaret Spufford believes “the inventory alone is a seriously misleading document”. She argues that they “must still be used, but their air of spurious exactitude....must be taken with...whole salt-cellars of disbelief” (Spufford 1990, 142). She is right to point out that those who put together inventories may not have been experienced in this task; their valuations could well be ill informed. Taking the inventories as they stand – estimates of value made by people who were unlikely to be professional valuers – they give some indication of wealth but cannot be relied upon to give a precise measure. Most items in an inventory will have been “assigned a ‘second-hand’ value which may well be somewhat lower than their actual resale value; we simply do not know” (Moore 1985, 14).

There are other questions that should be asked. For some, producing an inventory could prove a test of their ability to communicate in writing. Perhaps a greater reservation stems from the fact that inventories were not required from whole segments of society. Overton *et al* suggest that 40% of the population were excluded from the need for probate inventories (Overton 2004, 170). Technically, creating a probate inventory was not required where the estate was valued at less than £5. However, these people probably lacked sufficient capital to become pipemakers. Also missing are women. Probate inventories are occasionally completed for women, but normally these would be spinsters or

widows. They are rarely recorded in Kent. At this time women were very infrequently pipemakers, although many probably assisted as trimmers working with their husbands or sons who were masters or journeymen.

The final part of this chapter will bring together a number of key pointers concerning structure and agency in the pipemaking industry. However, it is worth considering at this point the extent to which the appraisers writing probate inventories were themselves playing a significant role as agents in their own right. It was the appraisers who give us the names of the rooms in pipemaker houses; they too identified the goods and may have misunderstood some of the items of which they had no direct prior experience. The appraisers select the goods to record; they decide which goods to put together and which to list separately, and they ascribe the values to each item or group of items. In making these decisions, the appraisers strain the data recorded; they remove and may change some elements, consciously or not, and in consequence play a significant role in informing and, potentially, misleading today's post-medieval archaeologists.

It is necessary to see inventories and most other contemporary documents as themselves being archaeological artefacts. Just as physical objects can be broken, damaged, lost, or altered and be capable of misleading attempted interpretations, the same is true for documents. Pages, even whole documents, can be misfiled or mislaid, pages can be torn and partly lost, individual words or lines can become obliterated or unreadable, and additions and deletions by people other than the original authors do occur. Just as with objects, there is the constant need to consider the purpose of the creators – was there any attempt to conceal or to distort? Was there omission by accident or design?

Clearly it is important to interrogate and evaluate the data probate inventories contain. Nonetheless, historical archaeologists have found they offer an enormously valuable, detailed and often unique record. My tentative conclusion from the studying the Kentish inventories is that the status of these pipemakers varied. They are not, as a group, amongst the poorest in society and the pattern of goods owned suggests that they were rather better off than a simple

comparison of inventory total valuations may imply. Initially, by becoming pipemakers they played a significant part in reconstructing their society. Presented with change or opportunity (as with the arrival of tobacco) they had responded positively. They appear well informed and knowledgeable as they made life-style changes.

The Pipemaker Inventories

Table 6, below, shows the names and dates of the eleven inventories known for Kent pipemakers, together with their locations and the values of their estates. For consistency here and elsewhere, the pipemakers are listed according to the recorded valuations of their estates.

Table 6: Names, Locations, Inventory Dates and Valuations for Kent Pipemakers

Christian Name	Pipemaker	Location	Year of Inventory	Value of Estate
William	Wickes	Dover	1747	£130 15s 6d
William	Lawrance	Faversham	1734	£130 4s 0d
Nathaniel	Herring	Canterbury	1711	£127 12s 6d
Christopher	Legatt	Milton/Sittingbourne	1716	£105 5s 0d
Robert	Hornsbey	Canterbury	1718	£101 8s 4d
John	Hallaway	Maidstone	1717	£76 11s 2d
James	Boxer	Maidstone	1671	£66 17s 2d
William	Tapley	Rochester	1716	£57 11s 6d
Richard	Holloway	Maidstone	1716	£49 10s 6d
Thomas	Kipps	Deal	1723	£17 5s 0d
Richard	Hogben	Canterbury	1702	£10 6s 6d

The towns and cities in which these pipemakers lived represent an acceptable sample of the locations of known pipemakers alive between 1600 and 1760. There are other towns where pipemaking occurred but where no probate inventories appear to have been preserved (for example from the towns fringing London). Nonetheless the towns listed properly emphasise the significance of

urban centres and of coastal sites as the dominant locations of the early Kent clay tobacco pipe industry.

Table 7 (pages 237-240) is an example of a probate inventory for pipemaker Nathaniel Herring from Canterbury who died in 1711. The language used is reasonably easy to follow (where necessary, an explanation is added in italic font). This inventory has been selected as the listing is full and clear. It also includes examples of many issues referred to in this Chapter.

Other Contemporary Inventories

Where comparisons are drawn below, the inventories of 119 non-pipemaker contemporaries have been studied. These are drawn from the towns from which the pipemakers listed in *Table 6* came. Where choice was possible, the selection was deliberately chosen to include as wide a variety of trades as possible, given the need to keep close to the dates of pipemaker inventories and to draw only on inventories from the seven cities and towns.

Looking for comparisons may, initially, seem a fruitless exercise as the values of the non-pipemaker inventories vary so widely. Twenty of the inventories had estates valued at £20 or less (they included two pipemakers); sixty-five inventories were for estates valued at £100 or more (five of these were pipemakers). If one is concerned to contrast the lives of non-pipemakers with those of Kentish pipemakers, some significant figures may be removed from the calculation of inventory values. Margaret Spufford has shown that there is “not a high correlation between the ranking of values of goods and chattels and the ranking of total values” (Moore 1985, 12 quoting Spufford *Small Books and Pleasant Histories*, 1981, *Table* 1). One reason for this is that some trades such as grocers, apothecaries, and clockmakers require a considerable investment in capital equipment and stock. Another is the wide variation in the debts due to the deceased. What is interesting is that if debts, stock and capital equipment are removed from inventories there is a considerable reduction of the variation in the gross values of household items across the sample of Kent inventories.

The information from the pipemakers' inventories and from those of their contemporaries and neighbours working in other trades will now be reviewed, starting with what can be ascertained about their houses and the constituent rooms.

The Number and Uses of Rooms

As Overton *et al* (2004, 15) note, it is impossible to be sure that every room was mentioned in an inventory (an empty room might well be ignored). There is no reason to assume that the house owner was other than the pipemaker, except where stated in the inventory, but this does remain an assumption. By design, inventories exclude real property (i.e. land and buildings), although inventories for some pipemakers and other workers show that the deceased owned or leased land. For example a miller, John Goldfinch from Canterbury, leased two mills and George Moore, a basket maker from Maidstone, owned several reed beds.

It was the usual practice to locate the deceased's possessions in named rooms and so some idea of the size of a dwelling may be inferred, even if room sizes are not standard. Also, the specialist purpose of the rooms, as given by the appraisers and largely confirmed by the goods, suggests something of the nature of living for those who dwelt in the houses. Nonetheless, it is possible that some items may have been brought together by the appraisers for the purpose of the inventories. Function and contents seem to provide a clear division between the open and private rooms in the houses; or to use Ian Mellor's words, the front and back spaces in the buildings (Mellor 2005, 50). The private area could be divided again between work areas and domestic areas. These constitute several *locales* each with its own main but not exclusive function. Thus William Wickes has a back chamber with two feather beds but it also acts as a store for fourteen gross of hunting pipes. This suggests most rooms probably had more than one function in the eighteenth century. Pipemaker Richard Holloway had a feather bed and a pallet bed in the 'Entry Chamber' of his house. This was unusual in Kent but it was not altogether unheard of. In Scotland, for example, "an enclosed bed was a feature of Scottish living rooms and kitchens" (Weatherill 1988, 160).

The mean average for a Kent pipemaker's dwelling was six or seven rooms plus any cellar, store, internal passage or stairway (see *Table 8*, page 241). W M Barley (1955, 294) mapped rooms against personal wealth. He was working on Lincolnshire inventories and for 1725, on the basis of 78 inventories, suggests 55% of inventories revealed five or fewer rooms; his figure for 1694 was 63.3% based on 79 inventories. In Kent, only 27% of pipemakers who died between 1671 and 1747 occupied houses with five or fewer rooms. This could suggest that Kent was a relatively affluent area even though in both counties the dominant occupations at the time would have been founded on agriculture. Comparison with Tom Arkell's research (2000, 86) also suggests the relative prosperity of Kent when compared with Nottingham, where most houses had between four and eight rooms, and Yorkshire, where the range was between two and six rooms.

Two examples of the use of the main living room from Kent pipemakers' inventories give some idea of how families lived. Christopher Legatt from Milton-next-Sittingbourne, who died in 1716, had a large house with eight rooms. One is called the Fire Room but this does not relate to a pipe kiln but, from the furniture distributed across the house, was the only heated family room; it was a name commonly used for the principal room in the house. The furniture included a pair of coat racks, so it seems to be an entrance way and so probably the most public room too. It also contained most of the household's more prestigious items. The room was decorated with seven pictures, two maps, a looking glass, a clock with clock case and seven old books. Six of the chairs are called 'leather chairs'; there were two other chairs and a stool. The room was heated by an open fire and lit by five candlesticks of various kinds. Some cooking equipment was also present. All these items suggest a relatively comfortable life style, with a hint of seeking to impress with potentially prestigious items on show.

The Dover family house of William Wickes had a parlour. Here the fire was confined to a grate with a chimney, perhaps reflecting the fact that this inventory was made in 1747, thirty years after that for Christopher Legatt. The fire has a brass fender. The room housed a clock and clock case, two tables, six matted

chairs, a picture and twelve china cups and saucers. There were thirteen pieces of glassware, some earthenware and a number of relatively prestigious items including a teapot, a china bowl and a spice box. There was a Bible and a rest. In addition, and unusually, the room also contained two blinds, probably serving as curtains. William Wilkes had a glass lantern: no other pipemaker had one, and only three non-pipemakers possessed lanterns. Although one might have been useful in a cellar, it does suggest the extent to which a dark night confined seventeenth and eighteenth century people to their houses.

Many other trades people, including most pipemakers, used a kitchen as the main heated room, sometimes decorating the room with pictures (as with Anthony Airy, a tailor from Rochester). A very few, for example Duncan Mackfarling, a wool-comber from Faversham, had two heated rooms: in his case, a kitchen and a curtained fire room.

The Value of the Estates

Mark Overton *et al* (2004, 140) created a table derived from inventories indicating that from 1690 to 1719 the mean for Kent inventories was £182.86 and the median £104.71. This suggests the eleven pipemakers were below middle status as the mean value of a Kent pipemaker's possessions was £79.7s.11d, with the median being £76.11s.2d (see Tables 8 and 9, page 241). However, two other studies suggest that Kent pipemakers were not poor when compared to other counties. M. W. Barley's figures for Lincolnshire for 1725 show 39% of estates were valued at less than £60 (Barley 1955, 293). For Sussex, E. M. Gardner suggests 46% of estates were valued at less than £60 for inventories completed between 1705 and 1723 (Gardner 1958, 123). For the Kent pipemakers, there were only 36% with estates valued below £60.

In order to consider further the house contents, it is useful to take the analysis of inventories from eight areas of England made by Lorna Weatherill in her wide-ranging study of *Consumer Behaviour and Material Culture in Britain 1660 to 1760* (Weatherill, 1988). Weatherill explores English inventories and presents some summary data of what she considers "selected" (as described in the index on page 251) or "key" goods (the term applied in *Table 4.1* and other tables). Her

sample of almost 2902 inventories covering the period 1675 to 1725 focussed on eight English regions, including East Kent, taking up to 390 inventories from each area. Weatherill took steps to avoid bias in her large sample (1988, 3) but unfortunately failed to capture details for any pipemaker.

Figures from Weatherill's selection of inventories are reproduced as *Table 9,* page 241. They are drawn from her two tables (numbered 8.1 and A2.2) and set against the information I have taken from the Kent pipemakers' inventories.

Conveniently, the dates of the known Kent pipers' inventories approximate to the period on which Weatherill focused. Although this may have been a time of some social change, happily the value of currency did not change greatly at this time, as Holderness confirms when he writes that there was a "great long-term stability of the price structure 1660-1760" (Holderness 1975, 95).

Arkell (2000, 89) claims that Weatherill "showed that the range and quantity of ...household goods increased substantially from 1675 to 1725 in eight widely scattered regions". He quotes Peter Earle writing of middle class Londoners early in the eighteenth century that "pictures, ornaments and clocks....and forks, coffee-pots and tea-kettles had become common place" (Arkell 2000, 90) and that the average value of their linen cupboards' contents (with 36 sheets, 89 napkins and 15 tablecloths) was greater than their kitchens' entire contents" (Arkell 2000, 90). However, Arkell claims that J.A.Johnston's study of 510 Lincoln inventories "revealed very little change from 1660 to 1714" (Arkell 2000, 90). Perhaps surprisingly for a county that seemed to follow London leads closely, Kent seems more like Lincoln in this respect as the inventories show little change in the range of room contents between 1671 and 1747.

When attempting some comparison between Weatherill's figures for England and the data for pipemakers in Kent, the first point to note is the different sizes of the databases. Moreover, Weatherill's data covers fifty years from 1675 to 1725, whereas the Kent pipemakers dates are from 1671 to 1747. Weatherill presents an analysis for ownership of key goods by the various social strata she defines (1988, 212). Her groupings of social status rest on the research of Dr Vivien

Brodsky Elliott's PhD thesis, Cambridge, 1978. In order to provide some comparators for Kent pipemakers with the data for English social strata as defined by Weatherill, the social divisions she uses are accepted here. The nature of the seven divisions of society she adopts is indicated below:

- Gentry. Weatherill makes this interesting point that "in spite of the gentry's superior wealth and social standing, many (goods shown on this table) were less frequently recorded in their inventories than in those of lesser-ranking tradespeople" (Weatherill 1988, 169)
- High status traders included mercers, drapers, clergy (Weatherill 1988, 180)
- Intermediate status traders includes clothiers, shopkeepers, innholders (Weatherill 1988, 178)
- Yeomen worked larger farms (Weatherill 1988, 172)
- Low status traders included shoemakers and nailers (Weatherill 1988, 177)
- Husbandmen worked smaller farms (Weatherill 1988,174)
- Labourers' estates rarely required inventories (Weatherill 1988, 176)

Despite the problems of mismatched dates when making comparisons with Weatherill's data, it is clear that in terms of inventory valuations, pipemakers could fit with the low to intermediate trader groups. However, in terms of their range of possessions, their status is established at a much higher level. The figures obtained for Kent pipemakers do suggest a more frequent ownership of many high status objects than was found in much of England (Weatherill terms these "front stage" items which might be seen by people outside the family – Weatherill 1988, 9). The following paragraphs explore some of these items.

Some Items Owned by Pipemakers.

Books

The percentage of pipemakers owning books exceeds the norm but in almost every case the Kent appraisers referred to the antiquity of the books: Christopher Legatt had "seven old books", Robert Hornsbey "one Bible and four old books" and John Hallaway "a few old books". The (literate)

appraisers would not have been overawed by the sight of books and one must take their view at face value. The key point is that books were owned by more than a quarter of the pipemakers and just under a quarter of the Kent non-pipemakers, a figure on a par with those of Weatherill's intermediate traders. Similarly, at the quite early date of 1716, Christopher Legatt owned two maps – no other ownership of maps appears in the contemporary Kentish inventories studied.

Clocks

Margaret Spufford (1990, 144) describes clocks as "one of the really significant possessions in the late seventeenth century" and so a good indicator of wealth. More than half of the Kent pipemakers had clocks or watches; Robert Hornsbey also had an hourglass. This was a larger proportion than among the non-pipemakers where only one in five owned a clock. This suggests that pipemakers had some need for accuracy in timing. Perhaps this was related to the duration of firing. If the high proportion of pipemakers owning clocks was merely a statement of status, their ownership might have been more widespread among non-pipemakers too.

Curtains

Nathaniel Herring's household has some calico curtains, a heavy white material, while Robert Hornsbey had blue Cheyne (probably Chinese) curtains lined with silk. Silk weaving had been well established since the seventeenth century in Sandwich and in Hornsbey's own city of Canterbury (Zell and Chalklin 2004, 75). George Besbeech, an upholsterer of Maidstone also had Cheyne curtains, while Edward King, a victualler of Canterbury, had silk curtains. Spufford (2000,150) sees curtains as a "useful index of increasing comfort" – she quotes Weatherill's calculation of English inventories mentioning ownership of curtains as rising from 7% in 1675 to 21% in 1725 (see Weatherill 1988, *Table 2.1* p260). In Kent pipemakers' houses, the figure for window curtains (all in bedrooms) reached 55% suggesting a high degree of 'comfort'; most pipemakers also had bed curtains. The pipemakers' curtains were all located in rooms apparently on the first floor and where there were beds, so it seems unlikely that the

ownership of window curtains, even of high quality, was any attempt to display good taste or claim status.

Tea and Coffee Equipment

The ownership of equipment for tea-making and coffee-making by three pipemakers shows they had certainly made a conscious decision to act on new information and respond positively to fresh options for hot drinks. In 1725 utensils for providing tea, coffee or chocolate were becoming widely owned in London but had already entered the lives of pipemakers in Maidstone and Canterbury, and, less surprisingly, at the port of Dover. The ownership of tea and coffee equipment was not quite so widely held among the non-pipemakers in Kent (eight inventories refer to tea and nine to coffee). There may be some indication here of the attitude of the early pipemakers in Kent: not only were they making a new product that relied on imported tobacco, but, as consumers, the makers themselves had also adopted the new cultural practice of taking tea and coffee. The consumption of hot drinks made from imported products is higher in Kent than in the groups Weatherill studied. There is no mention of any household using drinking chocolate although it was available in coffee/chocolate shops in the larger towns.

Linen

Most inventories itemised the linen owned by the deceased. Sometimes it is described as ‘old’ but occasionally high quality is suggested. Several pipemakers had bed linen described as ‘Holland’. This seems an indication of quality to be contrasted with coarse linen (the inventory for pipemaker James Boxer refers specifically to “two pairs of Holland pillowcoats, two pair of coarse pillowcoats”). Nathaniel Herring’s inventory delineates his sheets as ‘ordinary’. Others also had linen that appears expensive: Richard Holloway and Robert Hornsbey had Damask linen (possibly imported from Italy). Overton *et al* report that finer types of linen were increasingly found. Overton *et al* covered the period 1660-1749, so Hornsbey and Holloway, who died in 1715 and 1716, respectively, seem to have been amongst the first to afford quality linen (Overton *et al* 2004, 110).

The quantity of linen owned seems more significant than its quality. Linen was a high value item, involving a great deal of human effort to create. Spufford (1990, 164) suggests that ownership of an unusually high number of household durable goods provides “a fair index of comfort and possibly surplus purchasing power”. She mentions sheets as a particular indicator without suggesting what might form an excessive number. For the inventories of Kent pipemakers, the linen owned is shown as *Table 10*, page 242, (with the number of beds shown for reference).

The Legatt family does seem to have an excessive quantity of linen. However, this was one of the three largest properties with eight rooms, with no debts due at Christopher Legatt’s death. Quite probably, linen was passed from parents to children when the children married. Overton *et al* write that “marriage goods – that is items given by parents to their children to help them set up home upon marriage – may well have included linen and a linen cupboard” (Overton *et al* 2004, 111). The fact that linen was frequently described as ‘old’ might be explained by its use as a marriage good; it may well have been inherited or passed on. If Spufford’s suggestion is accepted, the Legatt family was comfortable and enjoyed surplus purchasing power. William Wickes and William Tapley similarly seem to have a great deal of linen. Other examples of apparent excess exist in workers in other industries, for example Clement Lee, a glazier and plumber of Maidstone, had linen which included fifty-one old napkins and eleven old table cloths. One of the richest tradesmen, Robert Callent an apothecary from Maidstone, owned twenty-five pairs of sheets, twenty-four tablecloths and one hundred and thirty napkins. In addition to its potential value as a marriage good, the possibly excessive ownership of linen would represent a more secure investment than holding precious metals, and it had the capability for use should the need arise. No pipemaker is recorded as having expensive jewellery, such as gold or diamonds, although they are recorded in the inventories of six workers in other trades.

Other Indications of Surplus Purchasing Power

Another possible measure of potentially conspicuous consumption could be the number of paintings, prints and ornaments owned. Robert Hornsbey had 52 pictures and prints in just two rooms, with another 10 images and 3 ornaments recorded in the same two rooms. William Wickes had eleven pictures, Christopher Legatt had two maps and nine pictures in two rooms, William Tapley had three pictures and Richard Holloway had just one. It would be tempting to suggest that Robert Hornsbey had surplus money, but equally the artwork he owned could have been his own creations. Twenty-four prints and paintings in one room and twenty-eight in another might indicate the size of those rooms, but we know nothing of the sizes or character of these works of art. No other worker came close to Hornsbey's total for artwork, but fifteen tradespeople beyond the pipemakers owned pictures.

Unusual But Telling Items

The inventories include a number of items, most recorded once only, that show something of the diversity of semi-luxury items held by families in Kent. The syllabub pots owned by pipemaker Robert Hornsbey is one example. The goods owned by other traders indicate the geographical extent of trade and the movement of traded goods. For example, Daniel Mann, a tallow chandler from Deal, owned twenty-five Holland tiles, presumably used for internal house decoration, and Edward King, a Canterbury victualler, possessed a slate table. Slate is a rock not found within two hundred miles of Kent and is very heavy; its qualities of being flat and cold could suggest use in dairying. Neither of these people was particularly wealthy. Others had such items as custard cups, porridge pots, egg slicers and pie plates – all indicating something of the variety of diet in the Kent tradespeople.

Horses and Transport

One significant area of expenditure missing from Weatherill's list relates to horses. Not only would these have been an important item of expenditure, they obviously imply additional spending on bridles, saddles, etc. plus the cost of a stable and possibly animal foodstuff. Some pipemakers like

Christopher Legatt owned a pillion saddle to permit the carriage of two people at one time. He also had a pack saddle and a hamper which he probably used for transporting fired pipes. Nathaniel Herring too had a horse and pack saddles. In all, more than half of the pipemakers owned horses, whereas only a fifth of the non-pipemaking traders had their own horse. The inventory for William Wilkes lists four hampers which might have carried pipes; however he is not recorded as having horses. John Frederick Bryant, writing in 1787 of his experiences as a pipemaker in Bristol (so just a little later than the period of focus for this chapter), claimed to carry a hamper of pipes on his shoulder and to sell up to twenty miles from home (Bryant 1787, 25). A similar figure is claimed by Hugh Oak-Rhind writing of pipe distribution in Wiltshire (Oak-Rhind 1980, 349). So horses, pack saddles and hampers may be pointers to a distinctive aspect of a pipe-maker's trade. It appears from this evidence that pipe manufacture and pipe distribution were not usually separate trades, at least in the early eighteenth century. However, it would be a mistake to assume that all pipe retailing was undertaken by the pipe maker as some was definitely undertaken by shopkeepers – for example John Harris, a grocer from Canterbury, held a stock of one gross of pipes and a quantity of tobacco in the room his appraisers called "The Tobacco Room". Although Overton *et al* write that "in early modern England going to work meant staying at home" (2004, 33), it is clear from this pattern of horse ownership that, for pipemakers at least, going to work also meant distributing pipes and, in many cases, perhaps providing a wholesaler role too. In addition, it is likely that hawkers obtained some pipes from makers and distributed the pipes on their travels.

It would be useful to explore more closely and with greater accuracy the number of people each pipemaker served. However, there are many factors militating against such calculations. First, knowledge of the population in Kent before the censuses is unreliable and patchy. Even where figures exist (for example in the work on *English Small Towns* by Peter Clark and Jean Hosking, 1993), there is uncertainty about who was counted, so correction figures are applied to the statistics used. Another problem arises when population totals for different dates are compared as the town delimitations

change too. Second, although well over 200 named people were engaged in pipemaking in Kent before 1760, it must be assumed that there were many others about whom we have no knowledge. The Company of Tobacco Pipemakers expressed concerns in official channels about unqualified makers in 1620 and again in 1664, so they must have existed in significant numbers. Their places of work are not known. We do not know the size of many pipemaking businesses – for example, how many journeymen were employed and whether this number varied. Finally we do not know if all makers were prepared to follow John Frederick Bryant's example and walk as far as twenty miles to sell pipes. The number of pipemakers in Kent who owned hampers suggests sale-on-foot did occur; the use of pack saddles, horses and baskets might suggest that Kent pipemakers at least matched Bryant's distances.

If it is accepted that pipemakers travelled up to twenty miles from their home in order to distribute their wares, this enables some judgement to be made about the date by which those living in Kent had access to pipes. Just using the dates of known pipemakers (and so ignoring others who remain unknown), it is clear that the Maidstone area and the north coast of Kent from London to east of Faversham was well served by pipemakers by the 1680s, as was Canterbury; East Kent had pipemakers by the 1720s. Coverage inland was erratic: industrial centres like Ashford and Cranbrook had pipemakers by the 1720s but towns distant from London, like Herne Bay, or from the coast, such as High Halden, had no pipemakers until well after the advent of a railway service in the nineteenth century. Presumably areas more than twenty miles from a maker, and so unlikely to get a regular supply, might have pipes available from hawkers, at special market days and through inns, taverns and, later, shopkeepers, who might negotiate their own supplies.

Capital in Kent Inventories

Money Due to the Deceased

Good and bad debts owed to the deceased are counted as contributions to the estate – whether all these were settled at face value is unlikely. Debts accounted for as mortgages or bonds were more likely to be honoured than casual trading

debts. Jeff and Nancy Cox show the difficulty in enforcing shop book debts; these were recorded by the deceased and not signed for. Furthermore, in 1609 Parliament put a time limit of one year on the validity of book debts (Jeff and Nancy Cox 2000, 31). What is interesting is the varying proportion of the inventory valuation that is accounted for in debts due, as *Table 11*, page 242, shows.

Spufford discusses the issue of credit and indebtedness. She writes: “Rural credit underpins the whole of English rural society so completely that the humblest individuals were involved in the network”. Spufford explains that a labourer might be deprived of pay for as long as a year and therefore would expect to borrow within the limitations of his anticipated income, not least to pay his rent. Similarly yeomen might owe rent for land to several different landlords (Spufford 1990, 173-174).

Amongst Kent pipemakers, the median debt was 9.3% and only one exceeded 13.1%. In contrast, Holderness writes that in 15% of the Lincolnshire inventories he studied debts represented one third or more of the valuation and “the general level of indebtedness appears to have been quite significant” (Holderness 1975, 97 and 99).

Keeping in mind Spufford’s view that credit underpinned rural society, what conclusions may be made regarding debts due to the pipemakers? Given the detail provided for Robert Hornsbey (who advanced a mortgage and more than seven other loans), small traders may have offered a rudimentary banking service in their localities. Perhaps those makers with no debts due were no longer trading on their own accounts? It seems that the norm was for pipemakers to advance around 10% of their capital as credit to customers, but some such as William Lawrance were prepared to loan a much higher percentage of their capital. A similar range of figures applied to other manufacturing trades in Kent.

Net Value of the Estate

Moneys owed by the deceased are excluded from inventories. Even if there was no debt to be paid, the cost of funeral arrangements, etc. would normally come from the estate. Occasionally, the net value of an estate was a negative number. This seems to have been most likely where dealing with the estates of poorer people. Margaret Spufford presents a table for husbandmen's estates in Lincolnshire. She describes these people as having fairly low status in their society. Ten of the thirty-five estates she listed showed a negative net account once debts incurred by the deceased were settled (Spufford 1990, *Table 3*, 162-163). On the other hand, some inventories may have undervalued the worth of the estate. The inventory for Robert Hornsbey, for example, has a postscript increasing the valuation.

Structures and Agents in the Early Pipemaking Industry in Kent

It is appropriate to review the first 140 years of Kent pipemaking, looking for wider themes and trends, and to apply more of the analysis structuration theory offers. Structuration is the process whereby society is constantly created and re-created with the ever-present potential for change. Social systems exist in and respond to a *milieu* which the systems themselves created and, in so doing, they construct a new environment. Giddens suggests that agents have two sets of co-ordinated resources which provide them with the power to reconfigure their social system: authoritative resources and allocative resources. It is necessary to consider what these resources mean for the pipemakers.

Giddens makes clear that authoritative resources include "the organisation of social time-space, ... the organisation and relation of human beings in mutual association .... [and] the organisation of life chances (constitution of chances of self-development and self-expression)" (Giddens 1984, 258 – Giddens' parenthesis). Authoritative resources result "from the domination of some actors over others" (Giddens 1984, 372). For the Kentish pipemaker these will include such aspects as the dominant political and social environments of their day, the state of and trends in the economy, innovations in technology, and their physical location and setting.

Giddens sees allocative resources “material features of the environment....(the) means of material production.....(and) produced goods” (Giddens 1984, 258) – they are “material resources involved in the generation of power, including the natural environment and physical artefacts; allocative resources derive from human domination over nature” (Giddens 1984, 372). In Kent, the pipemakers’ allocative resources will include the markets, both for raw materials and for finished pipes, the capital they have available, the existing productive technology, diversification of the business, the stock of goods and the means of production.

In order to explore the structures and agents in society and the responses of agents, it is argued, in Chapter Four, pages 91-93, that there is a need to separate agent from structure. Only by dividing one from the other is it possible to explore such issues as cause and effect, intention and achievement, and stasis and change. By separation, the different structures experienced by the agent can be identified and it becomes possible to review the intent and effectiveness of the separate but inter-related actions taken by pipemakers.

Initially in what follows, the emphasis will be on the structures within which the pipemakers lived. But straightaway structure and agency merge in the duality which they form. To become a pipemaker usually required serving an apprenticeship. Here is structure being experienced, but, in conforming to it, the aspirant pipemaker exercises agency. A father, putting his son to a master in an apprenticeship, gives an example of an agent deploying an authoritative resource. There is domination and, hopefully, good intent. From the perspective of the son, there is an awareness of structure; that is of an “enduring cultural or social relation” (Johnson 2010, 243). So one occurrence can be both structure and an example of agency. An apprenticeship to the son both constrains in terms of being bound to a master, but also liberates in terms of giving access to future employability. In many ways it was an essential rite of passage wherever a family could afford this for their sons. Arguably, the son in turn is being given access to allocative resources as he learns to dominate the clay to produce an artefact. Therefore, although for clarity there may be a focus on a structure or on an agency, throughout it must be remembered that both work together in an

inseparable harness. There is a falseness in this division which permits intellectual analysis, but it needs to be acknowledged as an enabling device rather than a statement of reality.

A second division will shape much of the remainder of this chapter. It will use the hoopla model outlined in Chapter Four. The first set of structures considered are those of which the working pipemaker is well aware. In diagrammatic form, these structures are in direct contact with the hoopla pole. The second set are structures which the pipemaker is aware of intermittently or possibly not at all; they tend not to relate directly to pipemaking but are significant social forces. These are the hoops that indicate real structures but which at this time are not in contact with the hoopla pole and so might not be perceived by the pipemaker.

Structure and Agency Central to the Pipemaker's Experience

Income

The first and most obvious structure faced by any tradesperson was the need to generate an income. To use Bourdieu's term, this really forms part of the fundamental *doxa* of life: the learned and deep-seated values and beliefs (Bourdieu 1977, 164). Work was a *sine qua non* of the times and not open to questioning or challenge. The economic and social world of the pipeworker was dominated by capitalism. Grover lists the four main principles of capitalism as private ownership of the means of production, profit accumulation, free competition in a market economy and limited government intervention (Grover 2002, 82). These reflect the values and beliefs which imbued the life of a pipeworker. However, the pipeworker would also have been aware of the significance of consumerism. This proved to be a growing feature of capitalism showing the significance of mass production, mass consumption and mass discarding – all features of pipe manufacture and use. The balance between Grover's principles might change over time, and even during the life of a pipeworker if she or he moved from being a journeyman to become an employer. However they were powerful features in the life of pipeworkers. Failure to provide for the family (for any reason) could lead to the institutionalised life of a workhouse – an example of intervention in the market that was something to be avoided if in any way possible. The pipeworker had little choice but to conform to

the expectations of being a worker and accepting that place in society – class "relations penetrated daily life and were interwoven with its threads" (Beaudry, Cook and Mrozowski 1996, 287). The agency of the pipeworker in conforming to class norms had the effect of strengthening the structures of capitalism.

Providing for the family was a fundamental priority. There was some choice as regarding how to do this. Some apprentice pipemakers came from families which had specialised in trades other than pipemaking; John Hadel (whose father was a cordwainer) and John Willkens (from a carpenter's family) were both apprenticed to pipemaker Richard Holloway. It is reasonable to conclude that pipemaking offered a trade that stood comparison with others. This view is supported by Robert Campbell who in 1747 published "*The London Tradesman*". This book provides a detailed review of trades practised in London in the first half of the eighteenth century and must represent an early venture into careers advice as it was "calculated for the information of parents and the instruction of youth in their choice of business" (frontispiece). By the 1740s, Campbell claims the pipemakers were established as seventy-eighth in the order of presidency of the ninety-one Incorporated Companies of the City of London. Many trades lacking this distinction included representatives of other new businesses such as tobacconists, sugar bakers and chocolate makers. Some long-enduring trades were not incorporated, including brick makers and glass blowers. It seems reasonable to conclude that pipemaking was a respectable and viable way of making money. Campbell claims that a journeyman pipemaker "earns from ten to fifteen shillings a week, and the few that are of them (are) pretty constantly employed" (Campbell 1747, 326). This figure is slightly higher than that received by journeyman gardeners or basket makers (who both receive nine to fifteen shillings a week, Campbell 1747, 274 and 244) and much higher than a journeyman grocer (at six to eight shillings a week, Campbell 1747, 189).

It was necessary to find paid employment: this was an expected norm of society. The decision to work as a pipemaker, an employment not open to people before the late sixteenth century, had clearly and quite rapidly become an option. It is certainly possible to see employment as a structure that imposed a constraint on human freedom, but pipemaking provided a new opportunity.

Skills

Acquiring skills such as pipemaking was an important enabling factor in raising family income. This shows the pipemaker developing his authoritative resources in order to generate income from work. While this skill might have been the major source of income and defined the person's trade, some families chose to engage in a second trade and practise byemployment. The reason for the choice of employment(s) is not always altogether clear. For some there was a link: Baker, a butcher from Deal, also kept beasts and Chandler, a grocer from Maidstone, also had beehives and had several acres of hop fields. For most occasions of byemployment, however, there was little link between the employment claimed on the probate inventory and the second trade.

A number of goods listed in inventories indicate the exercise of byemployment or that some family members were committed to other trades than that of the deceased. This is true for several pipemakers – William Wilkes and William Lawrance both owned gills. These were used to comb textile fibres before the fibres were spun into thread. Herring, another pipemaker, owned one and a half acres of hops. Byemployment may have been significantly attractive to pipemakers given the episodic nature of the manufacture of pipes. A second source of income could be an advantage for some who felt that, with a still new employment of pipemaking, some degree of insurance in the form of another job was required. Perhaps the intent of byemployment was simply to raise money and so provide a better living standard.

Other traders too exercised some variety in employment. Mackfarling, a wool comber, Whelland, a paper-maker and Woodward, a confectioner, all owned spinning wheels, while gills were owned by the families of Baker (a butcher from Deal) and by Goldfinch (a miller from Canterbury). Overton *et al* claim 33% of Kent inventories made between 1720 and 1749 indicated an involvement with textile production (Overton *et al* 2004, 47). Some traders appear to have been identified by one trade but to have focused their time on others. Mann of Deal – described as a tallow chandler – sold such items as tobacco, gunpowder and Geneva cloth; Whelland, the papermaker – owned two wagons, a herd of cattle and a quantity of barley, peas and beans.

Overton *et al* ’*s* view is that “byemployment in Kent was accompanied by enrichment of material culture and the acquisition of new consumption goods” (Overton *et al* 2004, 173). Certainly, byemployment meant a greater likelihood of continuity of income and provided some hedge against a slump in any single occupation. Overton *et al* see byemployment as “common in early modern England” (Overton *et al* 2004, 65).

In this early period in Kent, the resource of gaining a skill never seems to extend to the creation of a wider management role across several locations. There is no evidence of pipemakers at this time trading in more than one place simultaneously, although this does occur in some other trades (for example the Canterbury miller John Goldfinch was leasing two mills when he died in 1706). There is a suggestion that some pipemakers were able to grow their business to the point of needing additional workers before 1760. For example, William Wilkes devoted two rooms to pipemaking. However, the possibility of taking apprentices may have been sufficient. Also, the children and wife of the tradesman could undertake work that did not require a high degree of skill; tasks that could be undertaken without serving an apprenticeship and which probably could be of a part-time nature.

Prices and Stocks

Throughout their history, most pipes were cheap, although before 1760 pipes with longer stems and finer burnishing would attract higher prices. Unfortunately none of the probate inventories for Kent pipemakers provide clear evidence of the price of pipes, but William Wicks, in Dover, was making four varieties of pipe when he died in 1747 (‘hunting’, ‘short’ and ‘long’ pipes and others simply labelled ‘pipes’). If it is assumed that pipes, unless otherwise described, were the ordinary ‘everyday’ quality, then pipes appear to have changed little in price in Kent and therefore to represent a structure that was stable. The gross of pipes stored at John Harris’ grocer shop in Canterbury at the time of his inventory in 1696 were valued at two shillings (i.e. six pipes for one penny). Almost eighty years later, in Sandwich, Kent, pipes were priced at 5.6 pipes per penny when Captain John Harvey organised a celebration of his election as mayor in 1774 (Dorman 1893, 223). Pipes made beyond Kent seem to have been even

cheaper. In Marlow, Buckinghamshire, in 1688, Sylvester Widmere, a mercer, held eighteen gross of pipes valued at nineteen pence per gross – seven or eight pipes for a penny (Reed 1988, 33).

Gojak and Stuart (1999, 39) state that “a skilled pipemaker could produce pipes at a rate of about 500 per day”. This is a difficult figure to accept as pipes were not made in a day; there were a number of distinct processes involved and some like drying and firing took an appreciable time but required limited human effort. It might be acceptable to take this as an average figure, so making a thousand pipes could reflect a total of two days work in the various tasks of pipemaking.

Two further calculations are possible. If pipes were made at an average of 500 a day or 3000 in a six-day week, and if Kent pipes were priced at six per penny, then the pipes generated after a week’s work would be worth very slightly over two pounds. This sum must cover the costs for raw materials, fuel, capital investment and property maintenance. Nonetheless, the income from pipe sales seems likely to permit a master pipemaker to employ a journeyman at the figure suggested by Robert Campbell in 1747 of between ten and fifteen shillings per week and still remain ‘moderately profitable’ (Campbell 1747, 326).

Six inventories made no mention of any stock of pipes. Only two inventories list the number of pipes held by Kent pipemakers at the times of their deaths: Wickes held 158 gross and Legatt 38 gross. If the figure of six pipes for a penny is retained, Wickes held pipes valued at £15.16.00 while Legatt’s were worth £3.16.00. These figures represent a considerable investment – for Wickes it was almost 10% of the value of his estate. There is little reason to suppose that pipemakers sought to store pipes for any longer than was necessary – pipe would not appreciate in value while stored. This suggests the makers had markets for the pipes. Another perspective is gained by considering the time taken to generate these stores of pipes. In the case of Wickes it would have taken over forty-five working days, and eleven for Legatt. The reasonable inference is that both these makers employed additional help from journeymen or possibly apprentices (although no written record has been found for either taking an apprentice).

Any stock of finished pipes could have been ignored when the inventory was drawn up. Alternatively, the pipes might have been collected by purchaser after the death of the pipemaker but before the inventory was completed. Possibly, pipes, having been sold and awaiting collection, were not considered part of the pipemaker's estate.

It cannot be certain whether those stocks mentioned in inventories were kept ready to take advantage of a gap in the market, or as an insurance against ill health when work might not have been possible. In creating a stock, the pipemaker is exercising his allocative resource and demonstrating power over physical artefacts.

Raw Materials

Many pipemakers held stores of clay, some holding considerable amounts; in this respect they, as agents, again demonstrated access to allocative resourcing. They needed to preserve this resource, but none had the means to transport the quantities of pipe clay required, even from a nearby port, and certainly none had the means to bring clay from Dorset or further west. Perhaps the delivery of clay was uncertain and a large stock was required as a cushion against erratic supply.

A reasonably accurate estimation can be made of the number of pipes that could have been made from clay stored by pipemakers. *Table 12*, page 243, presents a calculation showing that Herring, whose inventory showed the largest store of clay, held sufficient clay to make two or three pipes for every person living in Kent. All other known Kent makers held stores of clay. This suggests that clay was indeed not available frequently and that a maker needed to have sufficient in store to satisfy his foreseeable requirements. G. J. Davies notes that clay going from Poole, Dorset, to other ports (mainly in the south and east of England) was received irregularly and for advance orders only, thus reinforcing the idea that pipemakers needed to hold an adequate stock of clay (Davies 1982, 236). It is clear that Kent pipemakers in the seventeenth century recognised a potential structural constraint and found an appropriate strategy for solving it. Conceivably they could contemplate working towards changes to this

structure in future – obtaining their own cart, perhaps, or making a direct contact with clay suppliers might have eased this situation. These would be the sorts of actions a pipemaker could take and the sorts of intentions he might have. However, it is not known whether such plans were ever given effect nor whether the consequences were as planned.

Richard Hogben and Thomas Kipps are not recorded as holding much clay; in each case, together with other items the clay had an estimated value of around £2. Neither held a stock of pipes. Hogben and Kipps had little by way of kitchen equipment and their debts were low or non-existent. Perhaps these men were seriously unwell or aged and had become unable to continue trading and in consequence no longer had a requirement for a stock of clay. Just possibly pipemakers such as Herring adopted a wholesaler role and made available small quantities of clay to smaller businesses. However, given the heaviness of pipe clay and the consequent difficulties in transporting it over land, it seems unlikely at this time that, outside big towns/cities, there was much wholesaling of clay. Davies does suggest that wholesaling was practised in the much more concentrated market of London (Davies 1982, 236).

In addition to security of supply, there was a need to ensure that the clay was of good quality. A reference in the State Papers for James I dated 1618 notes an application from William Foote to hold the sole privilege of selling clay because others were selling bad clay. While accepting that there was advantage to Foote in making this claim, it may well have been based on a true situation, namely that clay could vary in quality.

Other Structures.

The data and extrapolations presented here give an idea of some of the working structures within which pipemakers operated. Pipemakers shared the experience of many of these structures with workers in other trades. Many faced the need to obtain raw materials, to receive acceptable training, and to find an effective method of marketing. The set of structures within which pipemakers worked was not necessarily exclusive but they were unique in their combination. The raw material (clay) and the complementary good used with their products (tobacco)

were both obtained from distant sources and so attracted the uncertainties and delays that marine transport presented in the eighteenth century. The product they made was particularly fragile and probably used with less care than was the case with other fragile or delicate, but also expensive, items such as chinaware. Resulting from this there was a need to maintain a constant supply of replacement pipes and so pipemakers experienced a greater need for security of supply of raw materials or required the facility to store the finished goods. On the positive side, there would always be a steady demand from pipe smokers who wished to maintain their habit. Pipemakers did face structures which were particularly rigid and beyond their control; they may have wished for change but had severely limited power which they could exert as a body or as individuals.

Awareness of Structures

The need to work, the obligation and opportunities of Freedom and of Apprenticeships, and the need to store clay were the structures most immediately apparent to the pipemakers. These, in the hoopla model, would be shown by hoops physically in contact with the upright (i.e. with the pipemaker). All the active pipemakers would have been well aware of these structures. For some pipemakers, the amount of debts they carried must have proved another almost tangible constraint. Some debt structures might not have been much apparent during the lifetime of a pipemaker, for example debts owed to the pipemaker by customers and which, at his death, proved bad. In his lifetime he may have assumed that the money would have been forthcoming, eventually. Clearly the references to book debts show how trade was being facilitated deliberately by the actions of the pipemakers in giving credit; this is an example of the exercise of authoritative resourcing.

There would have been other less pressing structures which can be considered as hoops surrounding but only occasionally touching the pipemaker. One example is the tension between available help from within the family and the availability of suitable apprentices or journeymen. Other structures could include the limits imposed by kiln size. Some structures could bring increased opportunity; for example, in Dover, as the port trade increased and with it the rising potential of sales to sailors and shipwrights. Similarly, elsewhere in Kent

there were improving prospects and wider markets afforded by developing transport routes and growing urban centres.

Structure and Agency Peripheral to the Pipemaker's Experience

Conformity to Norms

Undoubtedly there would have been other structures that may not have been so apparent to, or questioned by, the pipemakers, but real nonetheless. These could include the need to conform to social and religious expectations. For example, when making a will a statement of Christian belief was required in most denominations. John Langley, pipemaker of Deptford, Kent, whose will is dated 2 November 1743, devotes ten lines, early in his will and before committing his body to the earth, to a statement of his Christian belief and expectation (PROB 11/731/138). Such a statement suggests that in everyday life a display of religious belief and observance may have been a significant structure.

Pipemakers who failed to complete apprenticeships or apply for Freedom were challenged by the Tobacco-pipe Makers of Westminster, from 1619, and by its successors. Pipemakers were aware of this structure but it does not seem to have been totally effective as the Company complained to the King about unauthorised trading and sought permission to punish offenders in 1620 (twice) and again in 1664 (Green, 1858 and 1863). Prosecutions for infringements took place in Portsmouth in 1662 and in Reading in 1623 (Vince and Peacey 2006, 16). There seems to be only one case known where action was taken against a pipemaker in Kent. This occurred much later at 'Foulstone' (Folkestone) and was recorded in *Fog's Weekly Journal* for 9 November 1728 where there was an advertisement for a house to let and pipemaking tools to be sold "at very reasonable terms" because the un-named owner had "no right to keep that trade, he not having served an apprenticeship to it".

One norm of crucial importance to pipemakers was that their products conformed to the shapes of bowl and lengths of stem current at any particular time. It is this conformity that permits the creation of dated pipe bowl typologies. Although a pipemaker in the nineteenth century enjoyed some degree of freedom in the moulding of pipe bowls, in the eighteenth century, many

pipemakers exercised very little creativity. The most popular bowl shapes and stem lengths appear to be in step with those of London and it seems likely that London was the locus of the power to initiate change. Bowl shape was a structure which was little challenged by pipemakers in Kent. The very act of ensuring that their pipes conformed to the norm served to entrench it further. This is a case of agency reinforcing rather than changing a structure. The agency of the pipemakers was limited in terms of their freedom to initiate change at this early stage in the history of pipemaking; strength lay in the structure and by conforming the pipemakers added to its potency.

The Home and Family Life

One aspect of structure that does not seem to have presented obvious issues was the nature of the accommodation in which pipemakers lived. For the most part, the dwellings were large and with sufficient space to allow physical adaption permitting the addition of a kiln, and perhaps a furnace room. There is no sense of material constraint here, apart, perhaps, for the two poorest pipemakers. All the houses were in towns or cities which may have offered an immediate market for some pipes.

Pipemakers wanted to enjoy reasonable comfort within their dwelling – they sought to possess things that would bring comfort (even warmth, in the case of curtains). The pipemakers showed an intention to enhance the family living standards and to hold goods of value against possible harder times in the future. They used allocative resources to seek to achieve this. Decoration in the house is common – pictures, images, hangings and even a tapestry are mentioned. To some extent, the houses show a desire for public recognition and status – clocks, books and maps might serve to illustrate this, particularly if they are located in the relatively public parts of the house (parlour, passage way, entry chamber, etc).

There is no obvious awareness of the dangers of keeping money and valuables in the home. In fairness, there would have been few alternative, accessible places of security in the eighteenth century. However, only one pipemaker from

the eleven held a musket, much the same proportion as for non-pipemaker traders.

The aspirations of the pipemakers seem reasonably straightforward to identify. As agents, many clearly were seeking to provide for their families or had recently made such provision – some pipemakers held clothing and furniture that were dedicated to the needs of the children. Apart from our ignorance about debts owed by pipemakers, none seem to be in poverty at the time of their deaths.

Enjoyment of the New Goods

What was relatively new is the consumption of imported goods. Obviously a pipemaker relied on the consumption of imported tobacco (even though some was grown within the country). The presence of equipment for handling spices, sugar, chocolate, coffee and tea were all new. This had been adopted speedily in Kent: a reflection perhaps of proximity to London. References to utensils required for making tea and coffee occur in 18% of pipemaker inventories and 14% of the other Kentish inventories examined. The size of the sample militates against assuming any more than the fact that pipemakers were enjoying the new goods at least as frequently as other people in Kent. Goods of foreign origin were sometimes copied, as with 'turkey work chairs'. Some of the fabrics mentioned were imported or made in the style of imported materials. This all reflects a new idea, that it was possible in Kent to enjoy the products of foreign countries without the end user in Kent selling anything in foreign markets. Extending the range of goods the family could utilise was not a decision free of consequences. This decision made by pipemakers and countless others would have unforeseeable implications for the structure of foreign trade and foreign policies in years to come.

Pipemakers as Risk-Takers.

Pipemakers show themselves as agents who took risks by taking on a new or relatively new trade. In some ways they were original in their ways of handling allocative resources:

- in the early years of the industry, they were working to supply a new habit which used a product never before seen in Europe.

- they bought considerable quantities of clay and coal which often travelled a long distance. The end product, the pipe, was very much lighter than the weights of raw materials required. In terms of economics, it was what Weber would describe as a weight-losing product more typically produced where the raw materials were found or imported (Weber 1929, chapter 3, passim). Perhaps the fragility of the pipe made preferable a location near the market.
- pipemakers, in the seventeenth and early eighteenth centuries, tended to make a limited range of products. The bowl shape evolved but relatively slowly and showing a high degree of uniformity across all producers. William Wickes' inventory of 1747 is the latest of those available; his inventory, including four different types of pipe, may show an early move towards diversification of output, so spreading his risks while potentially increasing demand for his goods and thereby raising sales and revenue. This could be read as showing increasing strength in the agency of this pipemaker.
- the business relied upon individual initiative and decision-making skills. Masters were exactly that – in control, standing or falling by their ability to resource, manufacture and sell and by their ability to find suitable apprentices or to hire appropriate journeymen.
- they made a disposable and low priced product.
- the product relied on complementary goods – tobacco and a means of ignition.
- those who also worked in the textile business had already participated in the practice of the division of labour – it is likely that, from the start, pipemaking was divided into sub-tasks that could be shared between family members.
- they used technology right from the earliest days of the industry – gin presses to mould the pipes and kilns in which to fire them.

Although the period covered by this chapter is long, in seeking to earn much of their incomes from pipemaking, the workers in this industry were exposing themselves to risk, particularly in the seventeenth century. Employment in the

industry grew slowly in Kent. Between 1620 and 1670 there were only fourteen pipe makers known to have worked in Kent; they were based in six centres with Canterbury dominant. There were only twenty-three names by 1680 (in eight centres). Igor Ansoff created a simple matrix that shows how entrepreneurs are working in the most risky business environment when they diversify and create new products in new markets. Scattered in locations across Kent, until about 1680, and maybe later, the Kent pipemakers were evidently risk takers, willing to seek improved livelihoods by starting a 'new' industry in a town (Ansoff 1957, 113-114).

After 1680, the number of pipemakers grew more rapidly; sixty-four by 1700 (in fifteen centres) and two hundred and fifty-seven by 1760 (in twenty-four centres). These are cumulative numbers, so in 1760 we may safely say that there were fewer than two hundred known makers alive and active in Kent. These numbers ignore the anonymous makers not referred to (or yet found) in any existing document. Robert Campbell, in his *London Trader*, puts pipemakers in the Appendix. It could be argued, as he does, that trades in the Appendix were "omitted in their proper place or that could not be ranged under any general head" (Campbell 1747, 318). However, it may be that the reason was as much the newness of the trade (coffee mill makers were similarly added in the Appendix). Even if these trades were no longer 'new' in the mid eighteenth century, they were not seen regularly as part of any other trade and, in isolation, were potentially risky. Some pipemakers became bankrupt, e.g. William Herbert and Edward Slater from Chatham were declared bankrupt in *The Bath Journal* for 14 November 1757, quoted by Mark Lewcun (1997).

Conclusion

The hoopla model of exploring structures is a helpful aid to exploring the early years of pipemaking as much of the data available is of the snapshot type, fixed in time and space. There is insufficient evidence across time to permit use of the spiral model in this first phase of pipemaking in Kent. Much of the data used for early pipemakers was created at the time of their death. There is little prospect for seeing how pipemakers handled a succession of structures over time and space. What is clear is that the actions of the pipemakers established and then

maintained their trade. The structure of indentured apprenticeships was adopted to encompass the new trade of pipemaking. Once metal moulds became the norm, there is no evidence of seeking technological improvement. They allowed others to create supply-routes for raw materials. Pipemakers through the period 1620 to 1760 became aware of what worked for them. They understood the general attitudes and dispositions – the *habitus* – that were appropriate and effective in their situations. In terms of ownership of a range of household goods, pipemakers seem at least on a par with other tradespeople. The pipemakers responded to new products.

Once the initial decisions had been made – to become pipemakers – and once the technology had been established, there seems to have been no sense of looking for change but rather there was an approach of respectability, security and stasis. Pipemakers had been at the forefront of progress, using the techniques of mass production. Perhaps they can be called the harbingers of the Industrial Revolution. Subsequent chapters will explore the extent to which they became risk adverse and resisted change.

CHAPTER SIX

STABILITY IN A WORLD OF CHANGE: KENT PIPEMAKERS DURING THE TIME OF THE INDUSTRIAL REVOLUTION (*c.* 1760 - *c.* 1850)

Introduction

Just as the time considered in the last chapter (1600-1760) was one of change, so also is the period studied in this chapter (*c.* 1760 to *c*. 1850). The momentum accelerated in the late eighteenth and early nineteenth centuries and became more widely embracing in its effects. This was the time of the first Industrial Revolution accompanied by the challenge of potential political revolution. The economic impacts of the widening British Empire were felt in many parts of the country. It was a period of hazard and of loss as well: to the west, America claimed its independence, while in the east, Napoleon dominated continental Europe. In addition, there were significant structural transformations: some affecting society more directly were national (e.g. the Reform Act of 1832), others were more immediately felt by the people of Kent with the rise of popular movements such as the Chartists. Additionally there was the increased migration from the land to the towns and cities and, towards the end of this period, the speeding of transport and of communications with the introduction of the railways and the spread of the Uniform Penny Post.

The argument of this chapter is that in the midst of structural modifications, the pipemakers of Kent largely stood apart. There is no evidence that they were marginalised by others or made the objects of discrimination. It may well be that the artisan classes, of which pipemakers formed a part, played a powerful role in developing the changing economic and political structures of their society. However, the pipemakers of Kent seem to have let other workers and communities take the lead. As the previous chapter concluded, by the middle of the eighteenth century the pipemakers' lives were quite comfortable. Many were relatively isolated from some changes: they could work in or close to home and so did not have regular or frequent contact with other working people, beyond clients and suppliers. This in itself could present a limitation to pipemaker agency. Towards the end of the eighteenth century

there was a downturn in the pipemaking industry with a decline in the sale of pipe tobacco and a rise in use of snuff. By the early and mid nineteenth century, there was a greater degree of security and stability for pipemakers. By the mid nineteenth century the most obvious response to new structures was a tendency in some urban areas for pipe workers to concentrate in groups which became long lasting and which were often dominated by a few key families, often being the employers. However, there was no move to alter either the technology of pipe production or to increase significantly the size of the units of production in Kent. The concentration of workers in certain areas had become established for many industries in addition to pipemaking. For example, the clock and watch-making area of Clerkenwell, the jewellers in Hatton Garden and weight-losing port industries which included oil seed crushing at ports such as Erith, Kent.

After setting the pipe industry within the economic history of Kent during the Industrial Revolution, this chapter will look for modifications to the industry first from documentary evidence and then from the pipes themselves. It will take two case studies and some evidence of ceramics to help reveal more of the agency of the pipemaking families and the structures with which they interacted.

Kent in the Industrial Revolution

In some ways, it was not just the pipemakers in Kent who may have been sheltered from many of the effects of the Industrial Revolution; the county itself was not affected so dramatically by these changes as were others, especially those with developing coalfields. By the late eighteenth century the iron industry had ceased in Kent (coal-based technology had replaced that based on charcoal). There was no working coalfield (the Kent coalfield both opened and closed in the twentieth century).There are no canals in Kent, save only the Royal Military Canal at Romney Marsh, built for military not industrial purposes. Although factory production methods would have been a feature of the military and naval undertakings on its north coast, there were no significant and widely adopted industrial inventions generated in Kent. This may reflect a number of causal factors. The perceived threat of invasion, or

merely exposure to potentially adverse influences from Europe (including the possibility of an incursion or of an all-embracing revolution), might be considered one explanation for the lack of capitalist-led industrial development in Kent. Another could be the increasing pressure on the county's agriculture of meeting the rising demands from what became a rapidly expanding London.

One significant transformation was in the distribution of population between urban and rural areas of Kent. The population of Kent grew from about 185,000 in 1750 to 616,000 by 1851 while the percentage living in towns grew from 42% to 58% over this period (Chalklin 2004, 100-101). The percentage of the labour force engaged in agriculture fell from a figure estimated to have been 40-45% in 1780 to around 21% in 1851 (Hartwell 1965, 18-19). Certainly these figures must indicate a degree of migration from the countryside to the cities and towns, but what these figures hide is the rise in the total population of rural Kent at this time from *c.* 167,000 in 1801 to *c.* 255,000 in 1851 (Lawson 2004, 102-103). The growth of London and improving transport links required more agricultural workers in Kent, even if they represented a diminishing percentage of the work force. It would be quite wrong to introduce a constraining structure of rural depopulation into any analysis of the impact of the Industrial Revolution on Kent pipemakers. Nonetheless, those seeking to establish new pipe businesses might have found the best potential for a growing market in the expanding towns.

Changes in the Size of the Kent Clay Pipe Industry

Despite the growing population of Kent, *Figure 9*, below, presents some evidence that the pipemaking industry was, at best, stagnating in the second half of the eighteenth century and the early years of the nineteenth century.

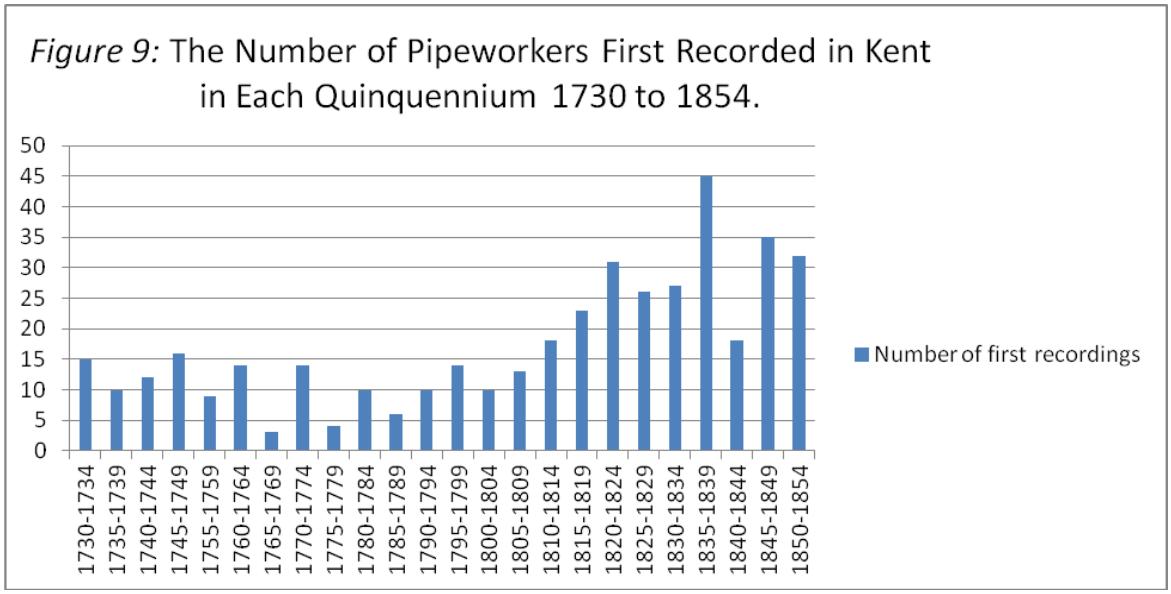


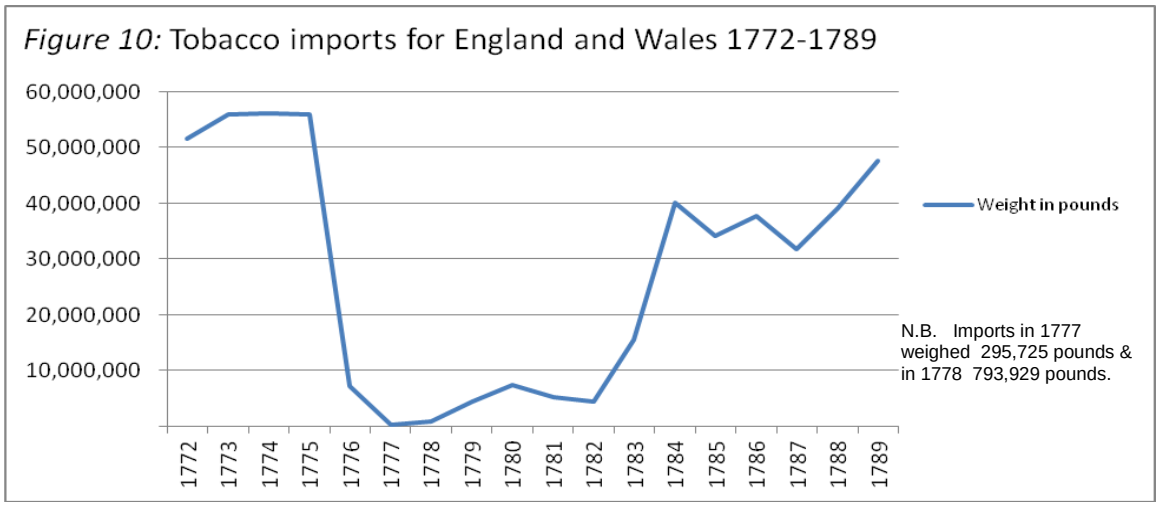
Figure 9 can only indicate general trends; there are reasons why it lacks precision. The first is that in this table pipe workers are ascribed to a quinquennium on the basis of their earliest or only recorded year. This year could mark any of a number of significant events such as their date of baptism, when they became apprenticed, the occurrence of their marriage or the baptism of a child.

The second reason why this Chart is imprecise is that it includes only pipe workers who are known by name. For most this will reflect the date of the documents providing this evidence. These include apprenticeship and freedom records, polling returns, and trade directories. Inevitably, an unknown number of makers and other workers remain un-named and cannot be counted. Evidence for their existence is found in clay pipes carrying makers' initials but where no known maker matches the initials. In addition, many pipes carried no markings; they may have been made by known makers or by people for whom no record survives. Many women and children are likely to have been working as trimmers and assistants in family businesses, but there are only limited written records of their activity. Nonetheless, there is no reason to question the deduction of trends shown in this chart and every reason to see the number of pipe workers as an understatement.

Instability in Politics and in Fashion

A decrease in the number of pipeworkers was already becoming apparent in Kent by the middle of the eighteenth century. In the years up until 1760 the number of Kent pipeworkers recorded for the first time usually exceeded ten in each span of five years, peaking at 16 in the period 1745-1749. That total was not exceeded until 1810-1814.

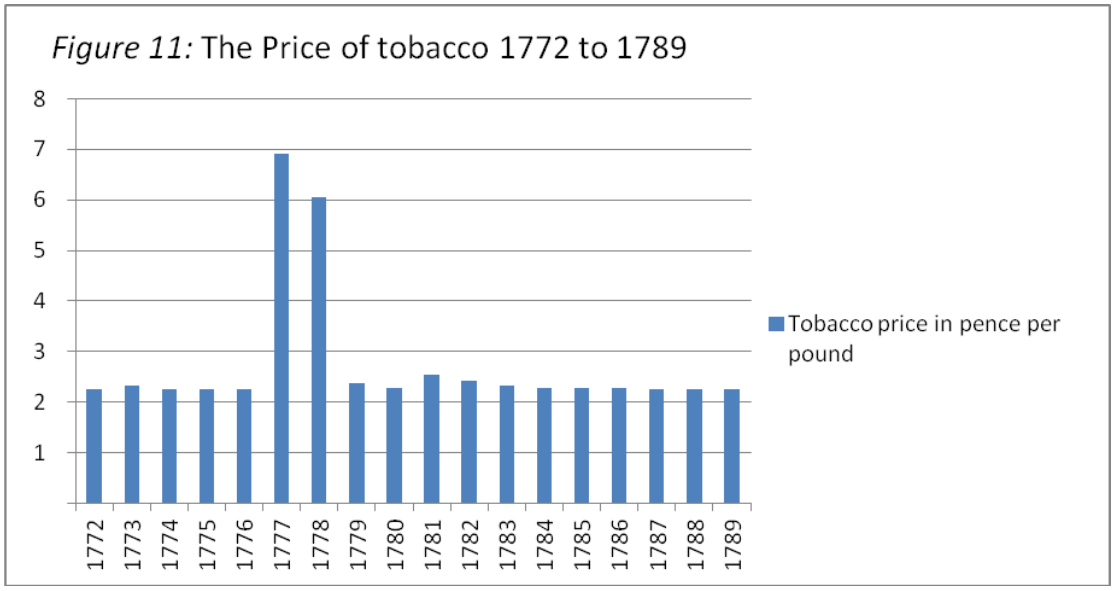
One factor explaining the decline in pipemaker recruitment could be the wider degree of political and military tension at the time. The Seven Years War, lasting from 1754 to 1763, was so broadly engulfing that Winston Churchill described it as “The First World War” (Churchill 1957, 123). Another war, the American War of Independence (1775 – 1783), had a more direct impact on the tobacco trade, and therefore indirectly on pipe-makers too. Tobacco and pipes are complementary goods; if the availability of one good diminishes, it is likely to provoke a fall in demand for the other. It seems probable that the main factor that was to have an adverse effect on the pipe industry in the late eighteenth century was the increasing indebtedness amongst the tobacco growers on the East Coast of America which in turn was a significant factor precipitating the American War of Independence. Imports of tobacco fell sharply at the time of that war and remained at a reduced level, as *Figure 10* demonstrates. The chart ignores the impact of any illegal trade (i.e. smuggling) which would have taken place but that may not be accurately assessed. Smuggling might have been influenced by taxation as much as by tensions in international relations.



Developed from Schumpeter (1960) Table 17 p56-59

There was no similar impact on other 'exotic' imports such as brown sugar or coffee beans. However, for some ports (Bideford, for example) the total loss of their tobacco import trade, which they saw as a consequence of the American Revolution, was to cause the end of any significant passage of imports through the ports (Smith, 2009).

Not only was there a sudden drop in the quantity of tobacco imported, there was a sudden, if less sustained, impact on the price of tobacco. As *Figure 11* shows, the price of tobacco more than tripled at the time of the American War of Independence.



Developed from Schumpeter (1960) Table 17 p56-59

Schumpeter's figures in Figures 10 and 11 pose a number of unanswered questions, for example about the qualities of the tobacco imported and the extent to which there was re-exporting from England and Wales. They are the best figures available and Brian Mitchell, who acknowledges that Schumpeter's work is "rather crude", nonetheless accepts that it has "been much used as a broad guide to secular price trends, safely enough in all probability" (Mitchell 1988, 715).

Figure 9 suggested that in the early decades of the nineteenth century there was a continuation of the lower level of smoking already apparent in the late

eighteenth century. The continued political and military threats in Europe and Ireland required a growth in the size of the British Army from *c.* 40,000 men in 1793 to more than 250,000 in 1813. In addition, over 140,000 personnel were enlisted in the Royal Navy (Chandler and Beckett 1996, 132). These figures amount to almost 4% of the total England and Wales population for 1811. (Gates 1996, 132) Their absence from civilian employment would be likely to have an impact on men available for work in the manufacturing trades.

The data in *Figure 9* make clear how, in the time of relative peace after the Napoleonic era, the demand grew for clay tobacco pipes and the number of new makers increased substantially, only to fall away again under the combined threat of the new smoking media after the 1850s. It would be tempting to suggest that these figures are significantly distorted by the availability of employment details in Censuses from 1841 onwards, but the post-Napoleonic rise in the number of pipe workers was apparent well before 1841. Similarly, the growth in the number of trade directories might be a factor. The date of the publication of the earliest directory used in this research (the Universal British Directory of Trade of 1792) does not appear to have influenced the record, and by the date of the next directory consulted, Pigot's for 1824, the rise in the number of pipeworkers was already clear.

Although there is evidence for a decline in the industry in the second half of the eighteenth century, this was not a feature peculiar to Kent. Boswell quotes Samuel Johnson while in the Hebrides in 1773 as saying "Smoking has gone out. To be sure, it is a shocking thing....Yet I cannot account, why a thing which requires so little exertion, and yet preserves the mind from total vacuity, should have gone out." (Boswell, 1773).

It may be that to some extent smoking tobacco was replaced by taking snuff, which requires less tobacco. William Cowper's "Poem to the Rev Mr Newton", written in 1782, described snuff as "in fashion all over the land" while pipe-smoking was "much fallen into disgrace" (quoted by Apperson, 1914, chapter 8). However, unlike pipe smoking, the use of snuff was a habit which, as Jon Stobart says, "gained considerable popularity among the elite" (Stobart 2013,

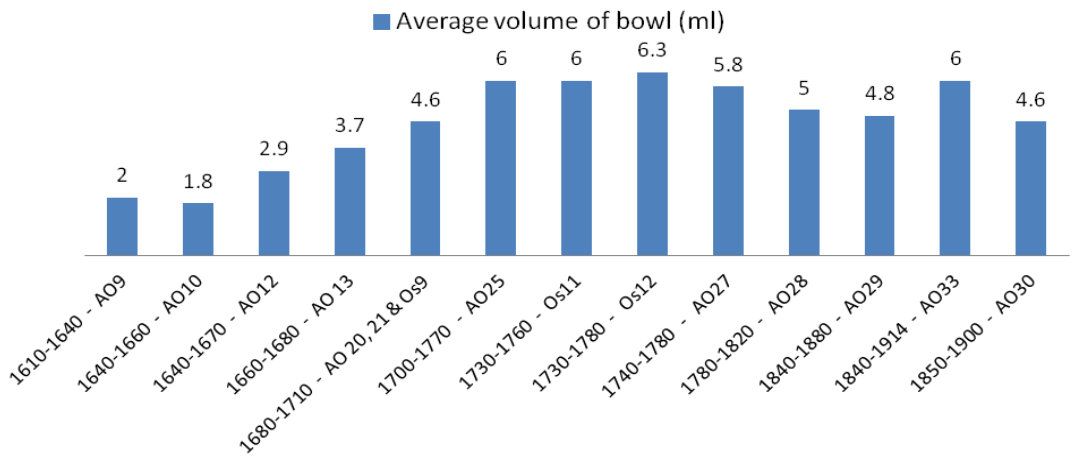
34). Certainly taking snuff attracted more elaborate rituals than were likely to be practised by working people. It was a habit accompanied by such expensive aids as snuffboxes, snuff spoons and silk handkerchiefs. Apparently its use could require training to the extent that lessons were advertised in 1711 in *The Spectator*. Stobart refers to snuff as a "mid eighteenth century craze" (Stobart 2013, 177 and 251).

The fashion for snuff, especially in the upper classes, accompanied by the uncertainty in the supply of tobacco and the reduction in the civilian work force combined to diminish the prevalence of pipe smoking, and to reduce the number of pipe workers, in eighteenth century Kent and beyond.

Bowl Size

Not only was there a reduction in pipe making, but, at the same time, the trend of increasing bowl size appears to have been reversed. This is suggested by a visual comparison of the pipe bowl outline shapes of the typology used in this thesis (see *Figure 6* pages 230 and 231). However, it is sensible to measure the volumes of pipe bowls to check the validity of this conclusion. This is required given possible inconsistencies in the thickness of the clay forming bowls. Also, there are variations in dimensions that exist within each type (see *Table 14*, pages 248 and 249) and a need to correct any uncertainty about the care and accuracy of the drawing of the type outlines. A sample of pipes was drawn at random from assemblages held by the Canterbury Archaeological Trust and the Greenwich Heritage Centre. *Figure 12*, below, shows the types and manufacturing dates against the average capacity of full bowls. The dates of manufacture for some types overlap but nonetheless a clear trend is visible: that pipes tended to increase in capacity until the late eighteenth century after which capacity reduced, only showing some possible recovery in the mid nineteenth century.

Figure 12: The Average Volume of Bowls



This trend towards slightly smaller bowls in the late eighteenth century may confirm a tendency for less tobacco to have been used by pipe smokers, however there is no reliable evidence for the extent to which bowls were filled with tobacco. Clearly, a tradition of using half-filled larger bowls could result in less tobacco being consumed than if smaller bowls were filled to capacity. Similarly there is no evidence as to whether any residual tobacco in a bowl was jettisoned after each smoking event or whether smokers opted to burn every strand of tobacco that entered the bowls. Finally, there is no evidence for the frequency with which smokers used their pipes. Smaller bowls could be matched by increased frequency of smoking. Nonetheless the direction of change is similar across all the data available and it is plausible to conclude that:

- there were fewer pipemakers active in Kent in the late eighteenth and early nineteenth centuries
- in consequence, fewer pipes were made in Kent
- a new preference for smaller bowls may have been established in Kent
- that, nationally, tobacco imports during this period were lower following the American War of Independence.

Possibly at this time there was low-key pipemaker and smoker agency when faced with the structural change in the availability of tobacco. However, there is no evidence of concerted agency being exerted by pipemakers, nor of any

conspicuous smoker-request for smaller bowls. Nonetheless, in the late eighteenth century, the trend for larger bowls was arrested while new moulds tended to produce bowls with a less generous capacity.

Transport

Although the pipe-making industry did not alter much in the period of the Industrial Revolution, there is some indication that there were changes in the ancillary industries that serviced pipemakers. For example, the arrangements for the supply of raw materials became easier. Early eighteenth century probate inventories show that pipemakers needed to hold large stores of pipe clay: presumably the supply at that time was both irregular and infrequent. In the nineteenth century records were kept of the passage of clay through Allington Lock on the River Medway. The ledgers of the Medway Navigation Company for 1845 record the supply of pipe clay to Philip Richmond, then of Tonbridge, which is on a navigable part of the Medway (Medway Navigation Company, 1845). Richmond is known to have been a pipemaker from the mid 1840s to the mid 1860s when he moved into the licensed victualling trade. On 30 April 1845 one ton of clay passed through Allington Lock *en route* to Richmond; on 17 June 1845 a further 64 “pieces of pipe clay” were transported to Richmond in Tonbridge, coming from London. If a “piece of pipe clay” is assumed to be a ball of clay (the usual unit by which clay was transported) and that a ball weighed about 32 pounds (Rex Key 2012, pers. comm.), then Richmond received some 2048 pounds of clay in June (2440 pounds is 1 ton). Another similar supply passed through Allington Lock in July 1845. This suggests that, over time, the supply conditions for raw materials may have improved to the point that it was no longer necessary for pipemakers to hold tons of clay in store; instead they could order at need. This would have been a significant structural development for pipemakers, especially those close to navigable waters. The costs of running the business would have fallen as the amount of money locked up in capital, here pipe clay, would have been reduced. A more reliable supply-chain would reduce a constraint and enable pipemakers to alter the organisation of their businesses to enhance profitability.

Consolidation and Concentration in the Kent industry.

Particularly after the conclusion of the Napoleonic wars, there is evidence of a tendency for areas of towns to become centres for pipemaking. Dartford is a particularly fine example where the industry focuses on a single street: Overy Street. Investigations by the Oxford Archaeological Unit (OAU) in 2001 explored houses numbered 1 to 9 Overy Street. The OAU uncovered pipe bowls dating from the eighteenth and nineteenth centuries. Their investigations provided no proof that these pipes were made in Overy Street. However, by the nineteenth century, pipes were certainly made in Overy Street. There are three principal sources of evidence: first a quantity of marked pipe bowls, many made by the same maker, Thomas Pascall, which were found by the OAU. Second are the Directory entries for Thomas Pascall, William Sandy and James Rumley who all appeared as pipemakers in a number of the Kelly Directories (Pascall also is mentioned in several Post Office Directories). Third are the census returns from 1841 to 1901. Although no kiln has been recovered, numbers 15 to 17 Overy Street are still known today as 'Pipe House'. Maps showing Overy Street to the East of Dartford together with a recent painting of the Pipe House form *Figure 13*, page 246.

Table 13, page 244, uses census data to list the Dartford pipe workers active in the industry in Overy Street from the middle of the nineteenth century. Pascall, Yonwin and Rumley represent a succession of employers who gathered workers around them. In a 1979 excavation led by the Dartford District Archaeological Group, a pipe carrying the initials TP was recovered (signifying Thomas Pascall). This pipe was made in a mould used by Charles Yonwin, who had his name impressed on the back of the bowl but left Pascall's initials on the spur. The others named 'pipemakers' on census returns were journeymen employees and so no pipes carrying their initials have been recovered. Their periods of employment could be lengthy: William Rooke and George Miller both worked in Overy Street for at least thirty years, as did their wives, who worked as pipe trimmers. If it is assumed that employers and employees acted as rational, strategic and informed agents, then an enduring relationship between them brought the mutual benefit of security. An extensive period of pipe manufacture at a single site could bring

the advantage of the location becoming well known for pipemaking. This might explain the arrival at Overy Street of migrant journeymen such as James Birchall (from Wolverhampton), Alfred Jones (from Birmingham) and David Moore (from Cambridge).

There were a few pipe workers who lived beyond Overy Street in Dartford; for example, John Crebb and Alfred Jones who by 1891 lived as lodgers in East Hill (which is immediately adjacent to Overy Street). By this time, the area of East Hill provided accommodation for well over 30 lodgers, of both genders and a wide span of ages. Many were recorded as 'travellers'. Interestingly, the proprietor of lodging houses in East Hill in 1891 was James Rumley, married to Mary. A couple with identical names lived at 17 Overy Street in 1881 and 1891, James being described as a pipemaker. One probable reading of this data is that by 1891 James was a landlord of rented accommodation but that he still kept a pipe business in Overy Street, overseen by his son, George. Maybe James Rumley was the owner of the kiln(s) in Overy Street and so made sufficient money to afford to create a second income from property. However, by the 1901 Census he may well have suffered from the increased competition faced by clay tobacco pipes as he was described as 'a gardener not domestic'. By 1901 no pipe workers lived in Overy Street and it is doubtful whether any pipes were being made there.

Other towns exhibited similar concentrations of workers. For example, in Faversham where East Street North and then its continuation south into Preston Street became the centre for pipemaking. The nineteenth century pipemaking industry in this town was dominated by the Sheepwash family. The first of that family, John, served an apprenticeship from 1774. His son, also John, was born in 1801. He worked with Hatton Brown in Faversham; Hatton Brown married his second daughter, Evelina. This second John Sheepwash also took apprentices probably including Hatton Brown and certainly John Wood. He had a son, again called John, who made pipes in Halifax (*c.* 1851) and in Melton Mowbray (*c.* 1861) before returning to make pipes with his then widowed mother. Other pipemakers who worked in Preston Street and seem to have no direct family link with the Sheepwash

family – for example William Saxby who ran a business initially as a pipemaker and photographer in the 1870s but eventually focussed entirely on photography.

Maidstone was a much larger town. With population of 20,801 in 1851, it was four times as big as Faversham. Size might explain why in the nineteenth century there were three small and peripheral locations where pipes were made with a fourth dominant centre to the north of the High Street. In this central area, at least five families were active at various times in the period from the late 1820s until the 1880s: the surnames were Bailey, Birchall, Hunt, Shaw, and Staples – the last, Jane Staples, would seem to have been a woman working on her own with her business recorded in Pigot's Directory for 1840.

Further examples of concentrations of pipemakers in Kent can be found in Gravesend, around the street that was known as Pipe Court, and in Deptford and Greenwich at locations close to Roan Street and Deptford Bridge. Dover, like Dartford and Faversham, shows pipeworkers largely confined to a single street: Limekiln Street and Snargate Street (effectively a continuous road) which was the centre of Dover pipemaking in both the eighteenth and nineteenth centuries.

Contact between Pipemakers Suggested by the Pipes

Having explored some of the documentary evidence, it is helpful to consider how pipe bowls changed in shape and decoration and to consider what links between pipeworkers may be suggested by these transformations. There are two broad developments in the Kent clay pipes that the typologies can identify:

1. Although the Kent pipes 'fit' the London typology, over 800 do not 'fit' exactly. The pattern of variations from the various types can be analysed.
2. The pipe bowls and to a lesser extent the stems show the increasing use of moulded decorations.

Variations from Defined Bowl Types

Looking at the variation from standard types present in bowls in *Table 14*, page 248, it must be emphasised that at the time the pipes were made there was no typology of pipes. There is no evidence of there being any pattern books or similar industry-wide or county-wide statement or set of illustrations describing the different forms taken by pipe bowls. Later in the nineteenth century larger manufacturers of clay pipes beyond Kent did circulate illustrated price lists of their pipes (e.g. the Broseley, Shropshire, firms of Rowland Smitherman and of William Southorn). It is testimony to the degree of informal contacts across the industry that bowl forms were repeatedly copied. In Kent, it seems very likely that the initiative for new pipe types came from London and spread rapidly through the county. There is evidence of contact between pipemaking families in Kent and London. For example, John Langley died in Deptford in 1743 and in his will he left £300 in Government stock to his wife's brothers who were members of a family active in eighteenth century pipemaking in north London: William Manby of 'Lymehouse' and Edward Manby of Hermitage, near Limehouse, East London (National Archives, PROB 11/1150/318).

Makers would want to get good use from each pair of moulds – they represented a capital investment that would not easily be discarded. There is evidence of pipe moulds being inherited and reused, as with the Yonwin/Pascall pipe discussed above. *Figure 14*, below, shows another example of this from Deptford where the initials of the maker appear to have been changed from IW to IB. This bowl can only be identified from its base; if the type is an AO27 (made *c.* 1780 – *c*. 1820), the maker IW is unknown but IB could have been James Burstow (active 1781-1782) or John Bean (active 1764-1786), both of whom lived in Deptford.

Figure 14: Overstamped Initials on a Pipe Base

Probably AO27
Deptford, Payne's and Borthwick's Wharf. BPZ 06 838
Over-stamping in the mould of a B over a W
giving IB from IW.
This artefact is in an assemblage held by Pre Construct Archaeology.

Makers tended to have several sets of moulds at any one time, as Nathaniel Herring's inventory shows (*Table 7,* page 237). Almost certainly in the eighteenth century, a maker would wait until a new mould was needed before buying a new one, even where the maker owned several moulds. This is one reason why the types of pipes cannot be held to specific years for introduction or discard; there would be a phasing period at both start and end. This might explain why the AO and Os typologies used in this research never span less than 20 years – perhaps reflecting the average life of a mould in regular use. Certainly a period as short as twenty years would allow the spread and decline of a design across the county.

The unregulated nature of pipe design allowed a considerable and persistent degree of variation from the 'standard' of each type as shown in the drawn typologies. There is a need to question the notion of a 'standard' as represented by the outlines provided by Atkinson and Oswald (1969) and by Oswald (1975). With no county, national or centralised norm for each pipe

type, a degree of variation from each type should be expected. *Table 14*, page 248, shows some of the variations from each type of bowl considered in the suggested typology (see *Table 2*, page 229, and *Figure 6*, page 230*)*. Other areas of bowl variation include the heels and spurs, and the angle between the bowl and the stem. The main bowl variations considered here are listed below, with the number of examples studied shown in parenthesis:

Tall (448) – these bowls have extended height measured from the end of the heel or spur to the highest point of the bowl, occasionally this could be as much as 5/64". (Imperial units are used here and elsewhere to measure the features of clay pipes as these were the units used by the pipeworkers at the time.)

Short (143) – using the same measuring points, some bowls were shorter than the norm, but usually by only one or two sixteenths of an inch.

Steep Lipped (88) – these pipes have standard shapes except for the lip of the bowl which has been cut so that the top slopes down and away from the smoker

Slim (85) – here the angles between bowl sides and stem match the norm but the pipe sides are closer together thus making the bowl more narrow; these pipes would be of standard height, however.

Large (24) – here again the angles of the bowl are normal for the type but the bowl has been made to a larger size than is usual, with the sides further apart and the height greater.

Bulbous (19) – here the pipe bowl sides bulge out from the norm, but in other features broadly match a standard type (for example, the angle between the rear of the bowl and the stem match a type, but the bowl itself bellows out slightly, most usually on the side of the bowl facing the smoker).

Small (8) – here all dimensions including height are reduced while keeping the angles and slope of the bowls unchanged.

The exploration of variation invites the question of when does a variant establish a new type of pipe rather than be seen as a variation on an existing type. Alternatively, it should be possible to postulate a standard variation and

so create subdivisions of the existing types but this would require measurement of more pipes than are currently available. This research does not focus on variation as such but looks to see what variations might reveal about the pipe industry.

Types can be identified for the 3766 pipe bowls studied for this research. Twenty-one AO pipes and sixteen Os pipes should be excluded as they are of types having four or fewer examples. Of the remaining 3729 pipe bowls, 3400 are from the AO typology and 329 from the Os typology. The pipes were examined for variation from types. The results are shown in *Table 14*, page 248. Given the apparently unstructured method by which most pipe design was transmitted, and the post-manufacture imposition of typologies, it is perhaps understandable that some 741 pipes were to a greater or lesser degree a variation on a standard AO type with a further 74 from the Os types. This represents 21.9% of the total number of AO and Os types studied for this research. Over half of the variant pipes proved to be examples of the taller variation (448 pipes, 12% of the bowls typed).

Altogether, variations are found in eighteen of the AO types. The remaining three AO types which have no variants account for seventy-eight pipes between them (2.3% of the total number of AO pipes recorded). Similar figures exist for the variants from the Os types. As with the AO types, the main area of variation is the height of the bowl, but, for Os types, a greater number of bowls are shorter than are taller.

The existence of larger and more bulbous pipes in addition to those simply taller than the standard shape emphasises the fact that many bowls had a significantly larger capacity than their type suggests. This is borne out by measuring the capacity of a selection of variants of pipe bowl types and is especially true of such long-lasting and popular types as AO 25, made *c.* 1700 to *c.* 1770. The average volume of all pipes of this type is 5.97ml but the average volume of the taller variants is 6.51ml.

The very earliest pipes were small (types made before the middle of the seventeenth century). This may well reflect the tobacco taxation policies of James I which made tobacco expensive. The presence of so many enlarged pipes of later date does suggest that the cost of smoking in Kent at least did not restrict the consumption of tobacco.

Figure 12 (page 148) shows a fall in average bowl volume after the mid eighteenth century. This trend is also reflected in the character of the variations from standard types (*Table 14*, page 248). This Table shows that types AO27 and AO28 are found in large numbers (well over 500 in this research); they were made from the mid eighteenth century until after the years after the Napoleonic Wars. Only about 5% of these pipes were tall for their type and so could have held a larger than standard quantity of tobacco. In the most common pipe type that preceded them, type AO25 (made from *c.* 1700 to *c.* 1770), almost 28% of the 865 pipes recorded were tall variants. Dominant variations from type and the bowl types themselves both show a reduction in capacity in the late eighteenth century

Similarly, well after the Napoleonic Wars, with tobacco supply more secure, almost 27% of type AO29 pipes, made 1840-1880, were tall variants. A structural change in the market for clay pipes affected the industry from the middle of the nineteenth century with the rise in alternative media for tobacco smoking. This increased level of competition seems to have made any trend in bowl size harder to determine. Type AO30 remained relatively small in its bowl capacity while type AO33 was particularly capacious (see *Figure 6*, p230).

One interesting variation was of pipes that showed a tendency for the bowl lip to slope away from the smoker. This was the norm for the majority of early pipes. Most pipes made in Kent after about 1700 had a lip parallel with the stem, but three types have a significant number of bowls with more steeply sloped lips than is usual for their types: AO types 21 and 30 and Os type 9. The type AO21 pipes were located at eight different sites; none of these bowls carried a maker's mark. All but three of these bowls came from five Canterbury sites. One site in Canterbury (St George's Clock Tower) supplied

fifteen bowls. It does seem reasonable to suggest that one maker or one family was responsible for making most of these pipes at the end of the seventeenth century in Canterbury. The existence of the three other sites outside Canterbury where similar pipes were found suggests that some other makers did make this variant of type AO21. The fact that other later types did produce a few bowls with a downward sloping bowl lip is further evidence that other producers also made this variant. Regarding type AO30, here again one maker appears to dominate as 29 of these 42 pipes came from Sandwich. A single example of type AO30 with this variation was found at Greenwich Magistrates Court while twelve were found in the St Gregory area of Canterbury, where eight were anonymous but four carried the initials WB (possibly William Birchall or William Brisley, both active in Canterbury towards the middle and end of the nineteenth century). There is a need for further analysis of the angle of bowl lip. The material presented here suggests only a few makers practised this variation. Possibly it was not popular and could have been seen as similar to earlier clay pipes and so perceived by some pipe users as old-fashioned.

The question arises about who provided the agency for these variations in bowl shape and dimensions. There is no evidence that it was the result of pressure from the pipe users. The fact that the variations were repeated across time and space shows that at the very least pipe users were content to use pipes of inconsistent capacity. However, the majority of pipes do conform to the norms for their types. This suggests that there was no positive intention to make pipes taller or larger. On the other hand, the more limited number of smaller and shorter bowls, and bowls with downward sloping lips, could suggest that pipe and mould makers sought to avoid making these variants and so had some agency in determining the shapes of the bowls they made. Mould makers probably played a significant part in the evolution of pipe designs. They may have been particularly well placed to do this as few specialist pipe mould makers are known across the UK and only one family in Kent: William and Edward Bagshaw who worked in Greenwich in the 1850s. If mould makers received custom from pipe makers over a wide area they would be well placed to disseminate new designs. Certainly in the nineteenth

century Pollocks of Manchester was in touch with London mould makers: Bagshaw, then in New Cross, and Woolnough from Mile End (Jung 2003, 185-254). Joseph Davis, a mould maker of Manchester contacted the three major pipe makers locally (McLardy, Holland and Pollock) with information about the designs he was making and inviting them to order the same designs (Jung 2003, 55). This could suggest awareness of fashion trends in pipes was a factor in deciding mould designs. The pipe catalogues of major pipe makers often show very similar designs. However, evidence from Glasgow shows that the large pipemaking firm of William Christie supplied mould makers with dies and written instructions telling them of alterations needed from an existing pattern of pipe (Gallagher 1986, 10-13). Ebenezer Church, a pipemaker of Pentonville but born in Beckenham, Kent, clearly created his own designs for the pipes he made (he patented twenty-six designs – Hammond 2009, 229-230). This evidence suggests that the impetus for creating and disseminating fresh designs may have come from the mould maker, with the pressure for minor modifications originating with the pipe maker. Clearly, pipemakers with sales in mind would seek moulds that made pipes which they expected to sell well. There is no evidence that these were made to meet the demand of a particular local market for the pipes.

Table 15, page 250, shows that almost two-thirds of the ninety sites across Kent from which records have been made revealed pipes which varied from the standard AO and Os types. So, as with the analysis by type, here analysis by location of finds shows the widespread degree to which variation existed in Kentish clay pipes. Archaeological reports from beyond Kent indicate the existence of variants from the established types. For example, Jacqui Pearce looking at pipes found in Limehouse, London, writes of “a form intermediate between ...type (AO29) ....and the more upright AO27 and AO28” (Pearce 2007, Section One). However, my study of Kent pipes is unique in that there is no similar study for entire counties which would permit comparison either by the nature of the variation or by spread of variations across a large area.

Decorated Bowls

Pipes made at a similar time but of varying types sometimes carry identical makers' initials. In all probability, the different types made at one time reflected an attempt to provide some choice for pipe smokers and so may suggest a degree of competition existing between pipe makers in larger towns. In addition, from the mid eighteenth century bowls and sometimes stems showed an increasing tendency to show moulded decoration. From this time the evolution of basic bowl shapes seems to have slowed while the range of bowl decoration increased. The range of mouldings is considerable. Pipes in the seventeenth century were often milled and/or bottered and some included the maker's initial or initials. However, there are very few examples of decorative bowl moulding before about 1700. There are exceptions. For example, the two pipes of AO12 dating from 1640-1670 found at St George's Clock Tower in 1991 (*Figure 15*, below). The pipes are bottered and milled around half of the circumference of the bowl lip. To the right and to the left of the bowl are single dolphins with flowers emanating from their mouths. The decoration is a little indistinct, but it is clear that this was a deliberate attempt at decoration with no other obvious purpose. Another example of the same bowl type has a crude angular image, wearing earrings, looking towards the smoker. The face is a copy of a Dutch pipe depicting 'Jonah'. This too came from Canterbury but was found in the Whitechapel excavations of 2001.

Figure 15: Two Early Decorated Pipe Bowls

Type AO12
Canterbury, St George's Clocktower, STG 91 1080
Dolphin moulded decoration.

Type AO12
Canterbury, Whitefriars CW50 2001-73 1202
A crude angular face, with earrings, facing the smoker.
Bottered

The photographs in Figure 15 both come from assemblages held by the Canterbury Archaeological Trust (CAT)

From the mid eighteenth century, increasingly, pipes showed the makers' initials and moulded seam and bowl decorations. The most common form of moulded decoration was the addition of vertical ribs, or flutes, and seam decoration; these became widespread in Kent with type AO25. Ribs were of

various thicknesses, some were fine with fifteen or more ribs on each half of the bowl, others had thicker ribs with as few as four each side, yet others alternated thick and thin ribs or placed the ribs in cartouches or combined the ribs with scalloping or other decoration (see *Figure 2*, pages 268 - 271). There was variation in the height to which ribbing continued up a bowl going from the base. Some bowl decoration continued along the stem; sometimes stem decoration was quite distinct from that on the bowls. Seam decoration was similarly varied with cereals and oak and other leaves being particularly common; some seam decoration spread along the pipe stem. In creating a pipe, excess clay is squeezed out of the mould by the pressure applied. To present a clean, plain pipe, this would need to be trimmed from the bowl and stem. Decoration of the bowl and stem would conceal this excess and reduce the time spent trimming superfluous clay.

Although many plain pipes continued to be supplied, adding decoration and perhaps surname and the hometown name may suggest an increasing desire on the part of some pipemakers to make identifiable the pipes they had created. Decoration became increasingly varied in the late eighteenth and especially in the nineteenth centuries. Many similar patterns can be found both countywide and nationally. This could reflect the improving transport links and the larger markets being established as people migrated to the towns. The number of pipemakers was growing, principally after the Napoleonic Wars (see *Figure 9*, page 143). It might be argued, as an example of pipemaker agency, that rational and strategic pipemakers, facing increasing competition, added new ornamentation to their bowls as a means of attracting custom. Each fresh decoration may have proved an attractive and briefly unique selling point, but designs were quickly copied both across the county and beyond. Nonetheless, at least keeping up with modifications in bowl artwork would be an obvious and sensible response of pipemakers to the changing commercial structures they experienced. It could be that the use of ribbing and new decorative mouldings not only made the pipes more attractive but enabled them to be sold as superior pipes at a higher price.

Pipemakers were not completely free to find new designs or methods of production. Bruno David, writing more widely of cultural products, expresses the situation experienced by pipemakers: “the particular ways they choose to do things are already prefigured by the field of possibilities characterizing the cultural traditions in which they dwell” (David 2004, 67). Thus, in Kent, any radically different technology, peculiar bowl design or unusual smoking medium (using a hookah, perhaps) would have been a development too far to be successful. There was a market economy and it was crucial for the pipemaker to make pipes that would sell. However, a degree of diversification – thereby affording some consumer choice – is what Teresita Majewski and Brian Schiffer expect to see in what they describe as “the second stage in the life history of products types”: “commercialization” (2009, 193-194).

The increasing variety of moulded designs may help explain a reduced pace of evolution in the basic shapes of pipe bowls. *Figure 6*, pages 230 and 231, shows the eighteen bowl types (marked ✸) that were introduced and then ceased production before 1760. After 1760, only eight new types were introduced in Kent (marked ❖). In addition, four types (marked ⅄) were made in the periods which spanned 1760.

Table 16, page 254, shows the range of moulded designs that were introduced to Kent pipes from the mid eighteenth century. It also shows the localities where the decorated pipes were found and the types of pipes carrying the mouldings. Overwhelmingly the decorated pipes have been found in urban areas: the London fringe, Canterbury, Maidstone and the Kent ports. None of the decorated pipes found in Kent are particularly large or exotic. They cover a wide range of eighteenth and especially nineteenth century interests. Pipes showing Masonic, RAOB (Royal Antediluvian Order of Buffaloes), military, sporting and political affiliations and activities are as frequently found as pipes which appear purely decorative showing grapes, birds, flowers, barrels, etc. Some of the decorations appropriately reflect a military presence across Kent (for example, the number of pipes showing ‘Inniskilling’ found in Canterbury, Woolwich and Greenwich probably relating to the 6th [Inniskilling] Dragoons, although there is no known record of this

regiment being garrisoned in Kent). Other pipes are found in unusual numbers. These can be designs favoured by few makers but appear in large numbers at one place in Kent (e.g. the Adam and Eve pipes made at Sandwich by Thomas Kipps in the early eighteenth century).

The decorated pipes would not have added cost to the pipemakers in terms of raw materials and firing and might well have reduced the labour costs of manufacture by removing the need for seam trimming. The work required in creating the moulds would have been more extensive and so the price of moulds to the pipemakers must surely have been greater. Some moulds may not have been worn out before they had become too dated to continue to use (e.g. pipes commemorating politicians or datable events). This increasing willingness to invest capital in the pipemaking businesses in the nineteenth century does offer some evidence for a growing sense of competition between pipemakers, certainly in the larger urban areas. Further evidence is given by the fact that from the middle of the nineteenth century a number of pipe designs were registered or patented in order to give some protection against copying original functions (e.g. smoke filtering) and bowl and stem moulded designs (Hammond, 1985). This is pipemaker agency at work; however, there are only two known cases of a prosecution following an illegal copying of a patented pipe design. Ebenezer Church, born in Beckenham, Kent, but whose pipemaking career focussed on Pentonville, took William Hensher to Court in 1877 and in 1888 Charles Crop, whose London-made pipes are occasionally found in Kent, prosecuted Henry William Baker (Hammond 2009, 230). As most markets for pipes in Kent were local, it could be that overt copying of designs would not have been a serious issue whereas in London it could be.

Case Studies

In order to demonstrate more clearly the agency of pipemakers and their relationships with the structures they experienced, two studies of Kent pipemaker families are presented here. They sharpen the focus on the constraints and choices available and consider how the people responded. In presenting these case studies it is possible to complement the earlier emphasis on location and variety with a stronger focus on family groups of

pipeworkers. This is taken further with an assessment of the ceramics found at kiln sites in Dover and in Canterbury where the pipemakers' families lived.

The Burstow Family (also known by other spellings such as Burslow, Barstow and Birstow)

The surname Burstow was shared by a number of pipemakers who were based around Greenwich from the late eighteenth until the mid nineteenth centuries. A good number were definitely relatives and it seems probable that this was an extended family group. There is a strong record of close family members working together and of the wife continuing to trade after the death of her husband. Thus a change in family structure may have had minimal impact on family pipe production. This appears true for:

Jane, succeeding her husband James Burstow in 1811 in Deptford and Greenwich. She may well have continued in production for a further 14 years (Bowsher 2007, 35). Happily the pipes, if marked with makers' initials, could continue with unchanged initials. One possible pipe made by this couple has been located in Woolwich although the place of recovery was not recorded.

Elizabeth succeeded her husband James Lambert Burstow in the 1850s. She appears to have moved about the time of her husband's death and to work next door to another known pipemaker, Henry Gosling, in Cannon Street, Greenwich. Conceivably they worked together. There are two pipes carrying the initials JB, both again of uncertain provenance, but which were found in the Woolwich area.

William and Mary Burstow made pipes from about 1825; William died in 1852 with his wife continuing in production, certainly until after 1855 when the Post Office Directory records her trading as 'Mrs M Burstow' at the location used by her late husband. Mary Burstow was at this time one of only three Woolwich/Greenwich pipe-makers recorded in this Directory. Her son, William Robert Burstow appears to have traded independently in the Greenwich/Lewisham area. One pipe of the appropriate type and date of manufacture and carrying the initials MB has been found at Borthwick and Paynes Wharf, Deptford. Four pipes carrying WB have been found: two from Woolwich and one each from

Greenwich and Lewisham. William and Mary's son Robert also was a pipe worker, based in Roan Street, Greenwich, but no pipes carrying his mark have been recovered.

Another William Burstow, almost certainly a relative, is also recorded as an active pipemaker in Pigot's and the Post Office Directories for the 1830s and 1840s. He was working close by in Morden Street, Lewisham and was succeeded by his son Thomas in 1846. No pipes carrying their initials have been found although it is conceivable that some ascribed here to Mary's husband William were in fact made by this William Burstow.

Three members of the Burstow family ran firms big enough to engage other workers from outside the family. The largest was William and Mary's business which had four employees in 1851; James Lambert Burstow had one employee in 1851 and William Robert Burstow had one employee in 1871 (Census 1851 and 1871). Not all members of this extended family ran their own businesses: a Robert Burstow (1791-1843, not the son of William and Mary) was a journeyman pipemaker in Greenwich during the first half of the nineteenth century.

The Burstows did take apprentices: James Burstow took Richard Carter as an apprentice in 1794 and William and Mary took Joseph Canlett as an apprentice in 1835 (Bowsher 2007, 43). Although the Burstows were active in the Greenwich area at least until the 1870s, they appear to have taken no more apprentices; presumably there was only sufficient work for existing makers to satisfy – a fact that would equally discourage potential new apprentices. Journeymen may have been easier to recruit and dismiss as the level of work changed.

The Burstow family provides evidence for communities of pipemakers. Charles Burslow (so named in the 1851 Census; almost certainly an error for Burstow) was born in Greenwich in 1808, but worked in Dartford and lived in Overy Street where thirty-one pipe workers were resident at various times between the 1840s and 1901 (see *Table 13*, page 244). Charles' wife

Caroline was a trimmer. Members of the Burstow family lived in Greenwich to the west of Greenwich Park in five still-existing streets centred around Deptford Bridge. Another street favoured by the Burstows was Limekilns. Limekilns is now lost and was probably a small street near Deptford Bridge. The street name is sufficient to suggest the local people were familiar with using fire in their trade and this could permit a tentative conclusion that the Burstows lived in close proximity to active lime and pipe kilns.

The Burstows reflect the changing structures within which they worked. There are clues for the ways in which the family members responded to these structures. For example, Charles Burstow's removal from Greenwich to Overy Street in the early 1840s. This came at a time when there could have been as many as ten males with his surname making pipes in the Deptford Bridge/Greenwich area. By contrast, Overy Street had only five active pipe workers in the 1840s although this would rise rapidly in the 1850s. As a consequence of moving to Dartford, Charles may have improved his own prospects and at the same time reduced a potential situation of excess labour supply being experienced by family members in Greenwich. Whether this decision was the calculated action of an agent, as is suggested here, cannot be stated unequivocally. For example, the move could have been precipitated by a family dispute. However, the fact that Charles and his wife moved to another pipe-making centre does suggest an element of rational and strategic thinking and the recognition of one solution to problems experienced in Greenwich. Also, it is possible to infer a degree of communication between pipemakers across NW Kent and to acknowledge that Charles had the power to act on the decision to move.

With the Burstow family it is easy to identify the variety of structures that impinged on the family members at one time. This could be a situation where the hoopla model (see Chapter 4) proves helpful. The data presented here shows how the family members are ringed by structures. These include:

- proximity to the river for transport, mainly of bulky raw materials and fuel, also preserving a degree of option over suppliers;
- the river also presented a northern limit to their potential market area;

- the existence of a ready market nearby, but where there was the threat of competition;
- the opportunity to vary their workforce by taking apprentices (but this involved a long-term commitment) or employing journeymen (more expensive to pay and possibly house, but probably easier to attract and dismiss);
- similarly, working in an area where many people made pipes gave journeymen more chance of regular employment, perhaps with several employers;
- the possibility of moving elsewhere, depending on the easy passage of accurate information;
- the availability of kilns, storage facilities and a local road network for distributing the finished pipes;
- the acceptability of building pipe kilns in an area where kilns were concentrated or where there was a local tradition of kiln use;
- the existence of family members who could continue the business in the event of ill health or death;
- working in an area where there is a high possibility of gaining work in other occupations if personal preferences varied or if the market for pipes declined.

At any one time a family might or might not be aware of the structures which surrounded them. For example, only when a family member seeks to move away from home might the family become aware of the potential difficulties they had been living with. Similarly, living in an area where kilns are concentrated may be advantageous (sharing kilns perhaps) or problematic (if a neighbour's kiln creates a fire risk). Again, the market for pipes might seem changeless, but it can improve, if, for example, a new dock is commissioned locally. Most of these structures are open to influence through the agency of the pipemaker – actively seeking new business, seeking funds for a new store, exploring other employment opportunities, and experiencing good marketing possibilities through living in close proximity to public houses and other potential outlets.

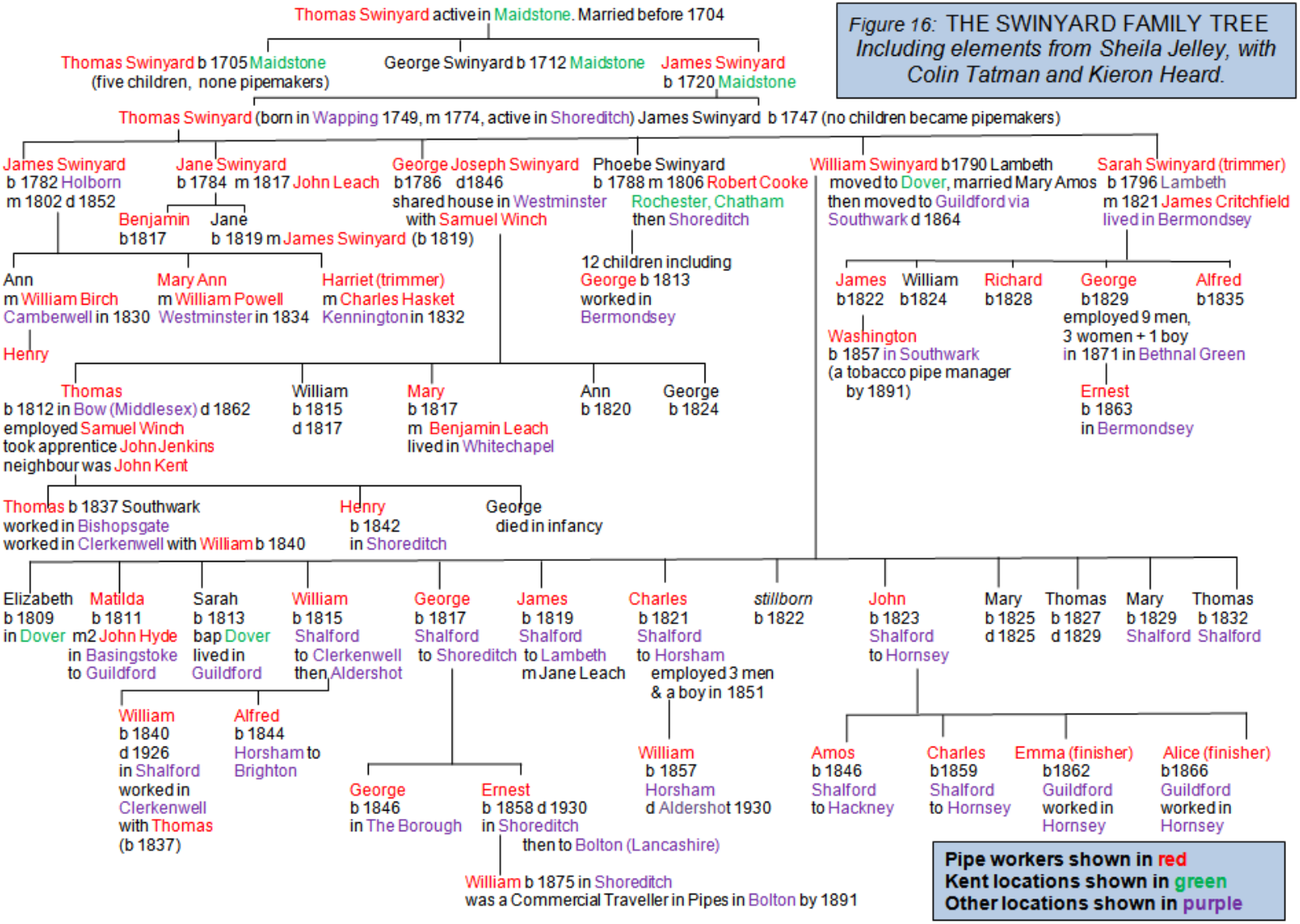


Figure 16: THE SWINYARD FAMILY TREE
Including elements from Sheila Jelley, with Colin Tatman and Kieron Heard.

The Swinyard Family

Many families demonstrate that pipemaking was the occupation of successive generations. This was evidently the case for the Swinyards (see *Figure 16*: The Swinyard Family Tree), where work in the pipe trade was carried out by seven generations spanning the eighteenth and nineteenth centuries and continuing into the twentieth. The mobility of family members is also shown here. Alfred moved from Horsham to Brighton and stayed a pipemaker there at least until 1911; Ernest moved from Shoreditch to Bolton, Lancashire, and was a pipemaker until at least 1911. His son William, born in Shoreditch, was recorded in the 1891 Census as a "traveller, pipe trade" in Lancashire. A number of women in the Swinyard family married pipemakers and quite probably some of the men married the daughters of pipemakers. *Figure 16* gives some indication of this family's exceptionally strong commitment to pipemaking, even though no individual business appears to have grown to become a sizeable employer.

It is worth looking at just one member of this extended family: William Swinyard born in 1790. William was the great-grandson of Thomas Swinyard, whose name was entered in a 1727 Poll Book at Maidstone. William's father, also Thomas, was a pipemaker in Shoreditch in the 1770s. It seems reasonable to conclude that William had served an apprenticeship in pipemaking, probably with his father.

William demonstrates clearly the power of kinship as a structure in his life and shows how he responds to it. He was born in Lambeth and moved to Dover. In all probability he would have used the turnpike roads to travel between London and Dover, probably along the course of the old Watling Street. The final stretch of the turnpike road (between Canterbury and Barnham) was opened in 1791. This travel must have been something of a brave decision for a young man to have made. What spurred this decision is not known. Oswald (1975, 130-149) lists London makers and named eight active in Lambeth around the start of the nineteenth century (with significantly more makers listed in adjacent areas such as Bethnal Green); excess competition might have been a concern. However, Dover had five listed by Oswald (1975, 174-

176) as active between 1775 and 1850. It seems unlikely that William's motivation was to experience reduced pipemaker competition. The answer may well appear in the church records for St Mary the Virgin in Dover where William married Mary Elizabeth Amos on 18 June 1809 and where his first child (Elizabeth Ann) was baptised on 4 January 1810. There is no record for a contemporary pipemaker surnamed Amos in London or Dover. So it is not clear whether William travelled to Dover with the intention of marriage with Mary or whether he met her after his arrival in the town.

William and his young family then moved to Southwark where his second child (Matilda) was baptised on 8 January 1811. His third child (Sarah) was baptised on 10 August 1814; the family had returned to Dover for the baptism in the church of St Mary the Virgin. It would appear that the choice of Dover for this baptism reflected a family celebration. Perhaps Mary's parents had visited Southwark for the birth of Matilda. What is very clear is that William and Mary were not discouraged from travelling between London and Dover for this baptism, even with a young family and with the expense of using turnpike roads. Not only was the journey a risk but it meant a loss of earning capacity while they were away from home. The conclusion must be that, having considered the risks and the expense, they still made a decision to travel. Despite living many miles apart, the two families were maintaining a sufficiently close and important relationship to make such a journey a reasonable proposition.

William's next move was from Dover to Shalford, near Aldershot where his fourth child (William) was baptised on 7 May 1815. William and Mary stayed in the Shalford area for the remainder of their lives although church records in the area suggest they moved between Shalford and Guildford. In all they had thirteen children, three of whom died in infancy. William died in 1864.

With the Swinyard case study the emphasis is more on a succession of structures rather than a multiplicity of simultaneously experienced structures. The spiral model (see Chapter 4) fits in well here and allows a situation to be seen to evolve over time. So, here, William Swinyard presumably serves an

apprenticeship in Lambeth, he moves to Dover, he marries, his wife has a child, the family move to Southwark, another birth occurs and another. The family visited Dover, then moved to Shalford, finally settling in the Shalford and Guildford area. Each of these actions is a contribution to the evolving life of the pipemaker family. The prime focus here is the passage of time. Each touch of a structural change is to a greater or lesser extent under the control of the family – to move or not to move, where to locate, how to accommodate a growing family, and so on. There is scope for agency here, but perhaps not enough evidence to determine the choices open to the family nor the reasons for the choices made. Clearly some of the choices would have been negatives: not to find new employment, not to move from an area, etc.

Ceramics

Further information about the lives of pipemakers in the late eighteenth and early nineteenth centuries may be obtained by a study of the ceramic finds unearthed at the sites of two pipe kilns, one in Canterbury, the other in Dover, both excavated by the Canterbury Archaeological Trust (CAT).

The CAT houses hundreds of clay tobacco pipes from many sites. However, only two sites are likely to have been where pipe kilns were located and where there is a high degree of probability that the associated domestic material culture was used by the households of the pipemakers.

Before exploring the ceramics, it is necessary to consider briefly the value of domestic ceramics in post-medieval archaeology. Some items can reveal particular information about the individual owner. Just as a clay pipe can indicate the political beliefs of the owner, or reveal membership of Masonic Lodges or of regiments, so too may domestic ceramics (for example, see a white earthenware plate in White and Beaudry. 2009, *Figure 3*, p221). However, most domestic ceramics tend to be household objects; they are very rarely owned by individuals. The exceptions could, perhaps, include ornaments, but almost all the ceramics found at the CAT sites were table and kitchenware. The opportunity for a significant nuanced interpretation is limited. Ideally, it would be good to explore the role of ownership of ceramics in terms

of it conferring a position in social hierarchy, or showing the role of fashion, or revealing the ways in which people imbue objects with their own meanings. Table and kitchenware tend to be made in quantity and may be chosen rather more on the basis of functionality, than on the purchaser's taste, preference or awareness of fashion. To some extent, however, the corporate family lifestyle and aspirations may be considered.

The Two Sites

Dover Sewers – site code DSR 91 Context 3. Excavation dated 1991. Site at Limekiln Street, Dover.

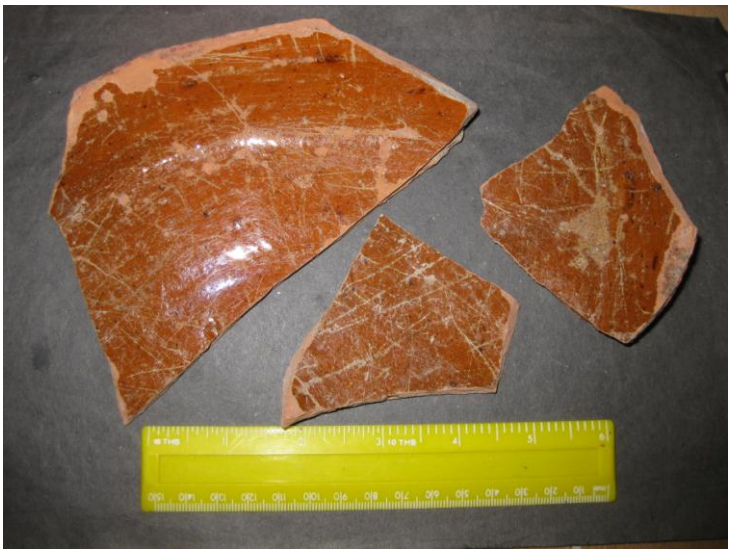
Dominant pipe bowl type recovered is AO25 (1700-1770)

Pipe makers: IC, possibly John Cornes, active *c*. 1750 – *c*. 1795 and two others unknown but probably related: HN and RN.

The association between pipe debris and ceramics is made in the Grey Literature "Assessment Report and Updated Project Design" by the Canterbury Archaeological Trust in 2001. Page 96 says of Context 3: "AD 1740-50 – group associated with clay pipe kiln debris (55 sherds)". Apart from locating the specific site by a railway bridge in Limekiln Street, there is no further information available.

Some of the ceramics found at this site were used in the kitchen. A red earthenware shallow dish shows cut marks from regular use in food preparation (see *Figure 17*, below). It is glazed only on the inside and on the rim – not simply to cheapen the item but perhaps to improve underside adhesion when in use on a wet surface. It may well have come from a local production centre.

Figure 17 Red Earthenware Dish with cut marks from regular use

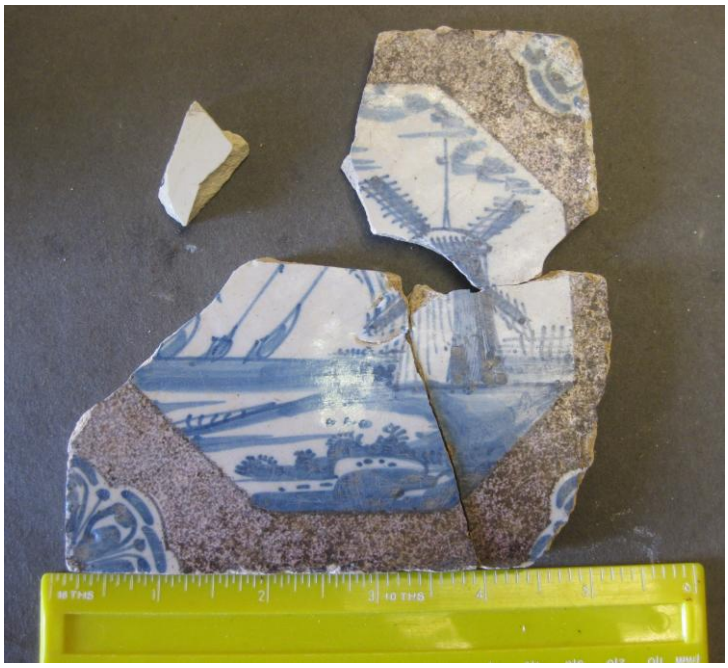


Dover Sewers, DRS91 Context 3
From a CAT site

Other kitchen items included a buff clay dish, honey glazed on the inside, and a flat dish, possibly used as a pie dish. There were some shallow bowls with sponge cobalt decoration.

Three items do suggest that the family were relatively comfortable, if not well off. There was a doubled-handled plain white colander or strainer. This was a heavy, tin-glazed item, a little unusual as tin glazed pottery is not selected frequently for robust kitchen use. It may suggest that the family could afford items that were not at a basic level. However, as the strainer was designed for use in cooking it might not be considered an item of conspicuous consumption. The idea of some possible affluence is reinforced by parts of several Delft tiles, one showing a windmill scene. This single find retains some cement to the rear and side and may well have been part of a fireplace surround (*Figure 18*, below). It has been dated at 1730-1770 (Chris Jarrett 2012, pers. comm.). Of course, it is possible that the purchase of this tile was not by the pipemaker but by a previous owner of the property. However, there were other imported ceramics, for example, some Lower Rhineland slipware. Only sherds remain but they came from three different but colourful pots.

Figure 18: Delft Tile with cement in place.



Dover Sewers, DRS91 Context 3
From a CAT site

Most of the items found here were ordinary; solidly built china designed for everyday use. However, the household china does suggest that the standard of living was pleasant but not one of affluence.

Canterbury Northgate, St Gregory's Priory – site code 1988-8B context 170 (also known as Canterbury Northgate B).

Dominant pipe bowl types recovered are AO27 (1780-1820) and Os12 (1730-1780)

Pipemaker: JP, possibly Jesse Parker born 1771 or John Parker, active 1797-1807.

There is no relevant documentary evidence available for this site. The evidence of the identical site codes for the pipes and ceramics suggests the finds were related and may have a similar date of deposition but a lack of further detail makes certainty impossible.

Much of the ceramics found at this site showed a high level of decoration. Some of it, for example pedestal goblets with banded decoration, has been described as "cheap and cheerful" (Chris Jarrett 2012, pers. comm.). There were whiteware bowls, hand decorated with coloured banding and spotting;

another bowl had a transfer printing, while a third had a crimped edge with feathered decoration. A lustreware vase was discovered with some other bowls showing mocha decoration.

Many kitchen ceramics were found including a bowl showing moulded decoration and another with sprig-moulded decoration. In addition, there was a bowl rim, turned over for strength, which probably came from a chamber pot. Like the ceramics from Dover, this site also produced a strainer but here the container has been fired to a high temperature which made it waterproof.

One interesting item was of black basaltware (*Figure 19*, below). It was moulded but the workmanship was particularly fine and detailed, showing fluting and scalloping. It is not clear what this vessel might have been; the preserved fragments suggest a pot or container a little larger than a teapot, possibly it was once a vase.

Figure 19: Black Basaltware Container

Canterbury Northgate, St Gregory's Priory, NGB context 170
From a CAT site

Most of these items are not purely functional but are well decorated. The mass-produced, but good quality, whiteware suggests the owners were working

people. Equally, the range of much-used kitchen ceramics indicates that this was a practical household with some ceramics not owned purely for their utility. The owners seem to have shown aspects of engagement with the dining and drinking fashions of their time, albeit without the higher quality products available at the time.

Concluding Comment on the Ceramics.

It would be unwise to generalise too widely on the basis of two sites. However other sites exist but where there is less certainty that they would have been the homes of pipemakers. For example, at St George's Clock Tower, Canterbury. Here pipe bowls have been found with what seems to be kiln debris attached – type AO27 (1780-1820), maker WB (unknown). Several transfer printed dishes have been recovered at this site. They varied in quality; in some, clearly seconds, the transfer had been crudely applied and showed splits and gaps. Another transfer dish was made to a higher standard and seems to have been part of a dinner service (there is at least one other sherd from another piece that shares the same pattern). A third transfer dish is marked 'Spode' in a lettering style used between 1784 and 1800. Actor-network theory would suggest that even if the decoration was imperfect, if such an item was on public display it might have demonstrated agency in attracting an immediate appreciative response in a visitor. The visitor might recognise an aspiration to good taste present in members of this household and in so doing in some way acquire an opinion of the family. This might be true even if the aspiration may not be achieved (Bourdieu 1984, 117-118). The mix of 'ordinary' and 'better' quality ceramics seems similar to that found where the evidence for pipemaking is more secure.

Interestingly this site produced a short English stoneware nineteenth century inkbottle – cheap and functional, but testimony to a commitment to writing. Barry Reay has shown that in the nineteenth century literacy was spreading amongst workers of the social group he termed 'trade' (which presumably included pipe workers). Reay shows how, at the most basic level of 'signature literacy', the ability to write grew rapidly in rural Kent from about 1830 (Reay 1991, graph p 95).

The ceramics suggest that the pipemakers owned a number of items which they were keen to have seen by visitors. Some items were simply attractively colourful or showed great detail. Other items, like the Delft tile, may have been a testimony to the relative affluence and good taste of the household. It seems reasonable to assume that these qualities reflected the aspirations of these pipemaking families. They had a concern for how they were seen and almost certainly welcomed visitors into their homes. They wished to present themselves as respectable even if close to the lowest levels of late eighteenth century or early nineteenth century workers.

The quality of the ceramics does not indicate the sort of affluence exhibited in the inventories of the early eighteenth century or late seventeenth century. Perhaps the impact of the decline in pipe smoking in the late eighteenth century is in part an explanation for the apparent reduction in living standards. A further difference is the fact that these excavated remains come from more urban sites than the more rural sites of the earlier pipemakers' dwellings. The indication must be that the owners were working class; not poor but maybe they represent the aspiring middle class in their taste and pattern of ownership. Conceivably some of the better quality items may have been seen as items to display (on a dresser perhaps) when not in use (Mytum, 2013).

Conclusion

What is clear from the evidence of the ceramics, case studies, pipe bowls and pipeworker concentrations is that in Kent pipemaking remained a trade that was practised at home or very close to it. There has been no indication for the sharing of kilns but this did happen elsewhere. John Frederick Bryant, who had worked as a pipemaker in Woolwich, shared a kiln in Bristol with his sister (Bryant 1787, 24). In all probability the kiln in Overy Street, as at other groupings of pipeworkers in Kent, was owned by a Master with a fairly stable group of journeymen and their trimmer wives living nearby.

One structure had the potential to encourage wider change; this was the increasing mobility of pipe workers. Mobility operated mainly at the level of individual journeymen, but could also involve whole families moving. There

must have been some informal network, perhaps only word-of-mouth or a location where information could spread and so people could discover where there were better potential opportunities. Within Manchester, in the late nineteenth century, a horse trough was the meeting place for itinerant pipemakers seeking employment (Pollock 2005, 29). The mobility of workers was a potential force for developments as ideas for pipe designs could travel with the mobile pipe makers. Communications between and within pipemaking families may well have been a factor in spreading new pipe types across Kent.

There is no sign of any significant change in the technology used to make pipes during the Industrial Revolution. Pipemaking remained dominated by family businesses although the number of workers in some instances was augmented by employed journeymen and/or by using apprenticed labour. There is no evidence in Kent of firms increasing in size beyond a maximum of about ten people per business; most were much smaller. There are no records nor artefactual evidence to suggest the existence of pipemaking factories. There are some buildings called factories but their size was invariably small. For example, Michael Martin at Woolwich (see *Figure 20*, page 258) who employed four hands in 1851. He and his brother and John Griffith appear to have lived together in 1841 and were described as ‘pipe manufacturers’ (Vicky Gunnell 2011, pers. comm.). In all probability such ‘manufactories’, as highlighted on the map, were as much storehouses or warehouses as areas for manufacture, although they could easily have accommodated a kiln. There was nothing on the scale of the larger pipe-making factories that were to be found in Broseley, Bristol, London, Glasgow and elsewhere later in the nineteenth century.

In effect, the industry in Kent did not alter greatly in the late eighteenth and early nineteenth centuries. The growth of pipemaker concentrations in urban areas was a development of the industry. However, in most cases the pipemakers remained serving their limited localities and in rural parts restricting their trading to an area which their business could service independently. Probably in the more densely peopled London fringe, the trading area for a pipemaker would cover a smaller area than in more rural surroundings.

Other industries in Kent did experience significant developments at this time. For many long established industries, this was a time of final decline. The last Kent iron furnace shut at Lamberhurst in 1787; the final Kent woollen worsted factory at Cranbrook closed in 1814; associated industries such as fulling and copperas also died. Linen maintained its place as a significant industry largely organised on a domestic basis, but this suffered from competition from Southwest England and Ireland and eventually declined (Preston 2004, 113). Some industries contracted but remained viable in pockets – for example silk manufacture continued at Greatness, near Sevenoaks, using local waterpower from the Darenth, but it ceased at Canterbury, almost completely migrating to Spitalfields by the early nineteenth century (Preston 2004, 113).

None of the new or expanding industries adopted the domestic or cottage organisation typical of pipe making. Some of these industries reflected the growth of London. So, creating building materials, especially brick, glass and cement, became increasingly important, mainly along the Thames. Perhaps reflecting the growing significance of London as the seat of government and centre for the press, and for commerce and finance, the papermaking business grew increasingly important. Some papermaking factories utilised old textile mill sites on the Darenth and the Stour (Booth 2004, 118). London also provided a growing market for agricultural products originating in Kent: this stimulated market garden products, vegetable oil, leather and brewing.

It might be argued that the concentrations of pipemakers in Deptford, Dartford, Maidstone, and Gravesend were the limit of the response of the industry to the wider industrialisation beyond Kent. It is almost as though the pipemakers were unaware of the move towards mechanised production techniques and a factory approach that developed in other industries in Kent and, especially in the coalfield sites elsewhere in the country. Perhaps the lack of a local reliable source of fuel for steam engines militated against the pipe industry in Kent following the example of the northern textiles industries in developing the new machines produced by Hargreaves, Arkwright, Crompton and others in the mid eighteenth century. However, coal was readily available by ship on the north Kent coast. Maybe there was a lack of capital in Kent to make the necessary

investment that a modification of production methods might well require. Perhaps there was a limited willingness in Kent to invest in pipemaking. But this is to overplay the problems of Kent for there were few parts of the country, not just the county, where the pipe industry made a significant response to the opportunities and challenges presented by the Industrial Revolution.

Pipeworkers in Kent largely retained a pattern of small-scale production. It seems they saw little pressure for them to change. The market for clay pipes had re-established itself in the first half of the nineteenth century; there was no obvious anticipation of the challenges that cigars and meerschaum and briar pipes would present nor of the potential of new products such as cigarettes. The industry in Kent had a ready market for its products; only in retrospect can the dangers of this fossilisation have been perceived. The agency of the pipeworkers seems to concentrate on maintaining the *status quo*. They could not foresee the dire but unlooked for consequences of preferring stability. The pipeworkers were in no position to appreciate the strength of the structural changes threatened by the advent of new smoking media.

CHAPTER SEVEN
THE KENT CLAY TOBACCO INDUSTRY IN DECLINE: 1850 ONWARDS.

Introduction

Countrywide, tobacco pipemakers in 1850 were about to experience the widespread introduction of new and increasingly popular smoking facilities. It amounted to a structural change of great severity. It is appropriate at this point to review the ways in which tobacco was consumed and how they changed from the middle of the nineteenth century.

The Structural Challenge of Alternative Smoking Media

Chewing tobacco was an early means of consumption used by the Native Americans. It was never very popular in Europe apart from in the mining and maritime communities. A nineteenth century form of chewing tobacco, still popular in Scandinavia, was **snus**. This, along with **dipping tobacco,** enjoyed some wider popularity in the late twentieth century, well after clay pipes had ceased to be significant.

Snuff is ground and often flavoured tobacco. Like chewing tobacco this was a method of tobacco consumption dating from the introduction of tobacco to Europe. It had always been an alternative to smoking and in the late eighteenth century was a serious rival to pipe smoking. Its significance declined in the nineteenth century but was still in use. Wilsons and Co (Sharow) Ltd. is probably the major supplier of snuff in the United Kingdom today, but it also continues to make and sell clay tobacco pipes, using moulds acquired when they bought Pollocks of Manchester.

Cigars, cheroots and cigarillos, etc. had been smoked for as long as pipes, possibly for longer. Before the advent of cigarettes, cigars were a convenient means of smoking, while cheroots and cigarillos were more easily manufactured as they are parallel sided, unlike cigars which taper at the ends. In the United Kingdom, cigars and similar means of smoking had been seen as alternatives to pipes but not major competitors. However Wills' output of

cigars, measured by the weight of tobacco, increased from 71,902 pounds in 1887 to 292,538 pounds in 1900 (Alford 1973, 1750). This does suggest that cigars gained a stronger position in the smoking market at the end of the nineteenth century and increased the competitive pressure on clay tobacco pipes.

An alternative to clay pipes were **meerschaum pipes** made from a soft rock and, originally, individually carved. They were relatively expensive but gave a dry smoke. These pipes were less easily broken than clay pipes. **Briar pipes** were cheaper and even sturdier than meerschaum pipes; they gave the first serious challenge to clay as a new alternative type of pipe. Methods were discovered to mechanise their production so that, in the same manner as clay pipes, price lists and catalogues became available, for example by the Civic Company in 1921. Briar pipes entered the market in about 1860, with synthetic mouthpieces from the late 1870s. 'By the 1880s they were in fairly common use' (Alford 1973, 111).

It was the gain in popularity of **cigarettes**, and the mechanisation of their production, that provided the major causes for the decline in clay pipe smoking. Smoking tobacco in rolls of paper did not become a significant method of tobacco consumption until about the time of the Crimean War, 1853-1856 (Goodman 1993, 94-97). The first cigarette factory in UK was opened around 1860. This would have been at much the same time as a new, lighter, milder-smoking tobacco leaf was introduced, better suited to cigarettes than the earlier strains. Initially, cigarettes were rolled by hand when 'a skilled woman could produce approximately 1500 per day' (Alford 1973, 125). From the 1860s onwards cigarettes were sold in packets and branded – this was convenient for retailers and customers and had the potential to develop fidelity to a brand. By the late 1870s American cigarette packets, widely sold in UK, included stiffening advertising cards (Cox 2000, 23-24). These were the forerunner of cigarette cards which would further encourage brand loyalty. By the 1880s cigarette making machines were being developed in USA, in particular one created by James A. Bonsack in 1881 which could make over 8000 cigarettes in an hour (Alford 1973, 143). This invention was speedily

adopted by W.D. and H. O. Wills in Britain (Cox 2000, 27). There were industrial disputes over the introduction of mechanised cigarette production in the 1880s (see Cox 2000, 30, footnote 37) and in the 1890s (reported for 5 July 1897 in the London Standard), but worker organisation (e.g. by the Cigarette Makers and Tobacco Cutters Union) was not effective. The advent of machine-made cigarettes increased the availability of cigarettes and reduced their price within Britain.

Cigarettes proved a very convenient means of smoking; they did not require a bulky pipe, or one that was easily broken, they became cheap, and were easy to light and to extinguish. The firm of Wills more than doubled its sales in three years: 6.5 million cigarettes sold in the UK in 1884 but almost 14 million in 1886 (Alford 1973, 165). By 1891, Wills alone sold over 126 million cigarettes in UK (Alford 1973, 169). Other companies such as John Players also experienced rising sales. Nonetheless, in 1890 cigarettes accounted for only 0.5% of all UK tobacco sales. However, by 1900, cigarettes accounted for over 12% of UK tobacco sales (Alford 1973, 171).

The popular requirement for clay pipes fell steadily from the 1850s; the pace accelerated and by the end of the century it was clear that the demand for clay tobacco pipes was in an inexorable decline. Maybe it is the wisdom of hindsight that enables this view to be expressed. As late as 1889 a new trade journal, ‘Tobacco’, carried a second leader entitled “The Future of Cigarettes”. It said:

> “We fancy the consumption of cigarettes has certainly reached its climax. It is doubtful whether it will be maintained. To us the smoking of cigarettes savours of the effeminate and is not suited to the English nation. If this is a correct assumption, it follows that the practice is but a passing fancy which may hardly last out the present generation.” (Tobacco 1889, 198)

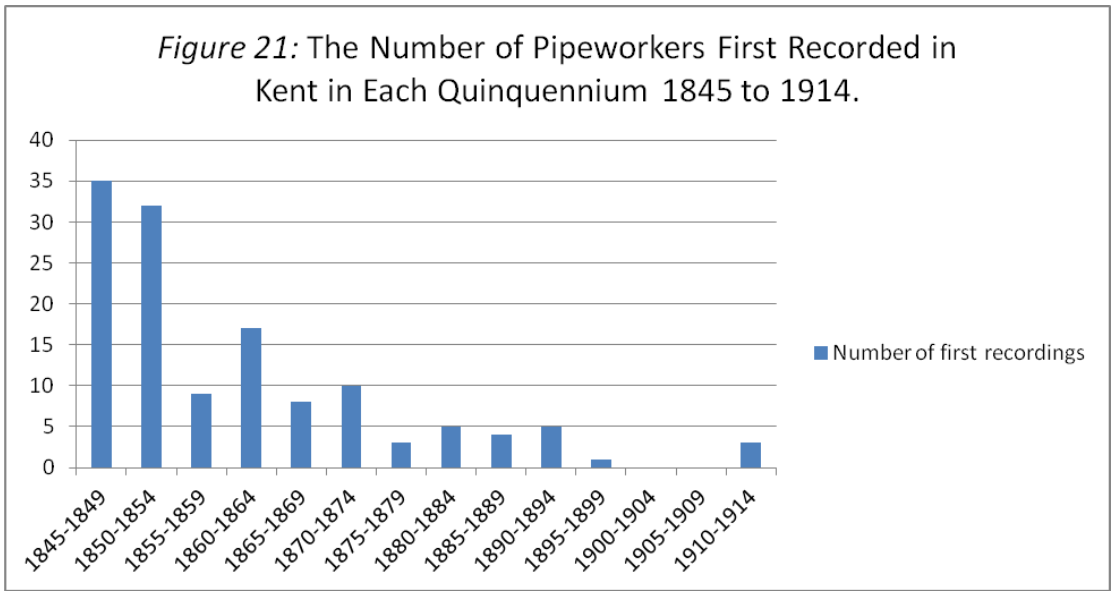
Arguably, however, the Kent pipeworkers were better informed that those who wrote leaders in the Press. Events proved they were right to take a more

pessimistic view of their industry. Certainly, faced with serious competition and reduced demand, the popular option in Kent was for pipeworkers to leave the industry.

The Pipemakers' Response: to Leave (or Not Join) the Industry

The questions are: what did the pipemakers do when faced with these significant structural changes; were the pipe makers in Kent typical of the pipemakers elsewhere; and did the actions pipemakers took result in the outcomes they sought.

At this point it is important to establish the numbers of workers in the pipe trade who started production (or who are first recorded as making pipes) in each quinquennium of the mid to late nineteenth century. The figures for Kent are shown on *Figure 21*, below, and reveal a speedy decline in recruitment to the clay tobacco pipe industry in Kent. (This chart continues the data provided for 1730-1854 in Chapter Six, *Figure 9*, page 143.)



In order to set pipemaking in the wider context of tobacco use, it is necessary to examine the figures for the consumption of tobacco. The figures given in *Table 17*, below, provide comprehensible data despite the fact that they cover Great Britain until 1810 and the United Kingdom thereafter (the figures for GB exclude Ireland; UK included Ireland until 1922).There is no reason to suspect

that the trend for tobacco use in Kent would be different to any significant degree. The Table shows a fall in consumption of tobacco in the early nineteenth century. However, equally clear is the fact that the consumption of tobacco recovered and then grew during the later part of the nineteenth and early twentieth centuries. It must be remembered that these figures are drawn from Customs figures of tobacco imported for home consumption (as opposed to imported for re-export). *Table 17* and *Figure 21* demonstrate that the number of clay tobacco pipemakers fell while the quantity of tobacco smoked increased from the 1850s.

Table 17:

The *per capita* Consumption of Tobacco in GB/UK 1790 to 1920

YEAR	Pounds of Tobacco Consumed p.c.
GB: 1790	0.75
GB: 1800	1.24
GB: 1810	1.18
UK: 1820	0.76
UK: 1830	0.81
UK: 1840	0.87
UK: 1850	1.00
UK: 1860	1.22
UK: 1870	1.32
UK: 1890	1.42
UK: 1880	1.55
UK: 1900	1.95
UK: 1910	2.00
UK: 1914	2.19
UK: 1920	2.99

(from Mitchell 1988, 709-711. “Consumption 2: Per Caput Consumption of Coffee, Tea, Sugar and Tobacco”)

Fewer children who started to follow the family business of pipemaking remained in the trade, even after serving an apprenticeship. Well before the end of the nineteenth century the term ‘apprenticeship’ had become less well defined in most trades. The term was still in everyday use in the nineteenth century but may have meant little more than indicating that a young person was undergoing training. Many examples are found in the Census records, even after pipemaking had ceased to be a significant source of employment. For example, the 1911 Census shows Thomas Akhurst of Sheerness, *apprentice* coppersmith, Laurence Brewster of Dover, *apprentice* cabinetmaker, and Clara Baker of Maidstone, *apprentice* dressmaker (my emphasis). However, the last Kent clay tobacco pipe ‘apprenticeships’ seem to have been underway in the 1860s when James Wood was apprenticed to John Sheepwash in Faversham, Walter and Alfred Hunt were apprenticed to their father in Sheerness and, probably, Henry Stubbs was apprenticed to his step-father John Ridelle (or Riddell) in Lewisham.

It seems reasonable to conclude that in the last half of the nineteenth century there were many pipeworkers who found competition within the industry increasingly severe. Although much earlier there had been an element of byemployment in pipe making, for example the eighteenth century Kent inventories showing a degree of involvement in agriculture, later in the eighteenth and early nineteenth centuries there seems to have been greater specialisation on a single trade, as shown in Chapter Six. There had been a clear trend for pipemaker families to emerge and for some members of successive generations to continue the family trade.

In the second half of the nineteenth century the growing uncertainty over the future for clay tobacco pipe making was visible in a rise in byemployment. Quite conceivably a number of pipeworkers who moved in to the licensed victualling trade continued to make and sell clay pipes on a small scale. The census reports and commercial directories record many examples of pipemakers whose initial entries only give pipemaking as an occupation, but who later have changed occupations or who added another trade to that of

pipe making. The following thumbnail sketches, largely drawn from Census records, illustrate the changing lives of pipe workers in late nineteenth century Kent.

Charles Hambrook, after an apprenticeship to his pipemaker father in Dover, became a ticket porter by 1861, a publican by 1871 and a licensed victualler by 1881.

Philip Richmond in 1851 lived in Tonbridge working with a journeyman and an apprentice. He moved to Chatham and at first continued making pipes but by 1871 was a licensed victualler. In 1881 he had become the beer housekeeper of the Sultan Beer House in Chatham.

Hatton Brown was a pipe manufacturer in 1858 in Dover (Melville's Directory, 1858) but added shop keeping to his work (Post Office Directory, 1867). He employed two boys in his pipe making business in 1871. By 1891 he remained a pipemaker but also had become a collector of coal dues. Although he continued in these roles in 1901, his son, John Brown, did not follow his trade but became a carpenter.

William Barstow was a pipemaker employing one man in Greenwich in 1871. By 1881 he is recorded as being in Lewisham as a 'general labourer – unemployed'.

William Sandy in Dartford was recorded as a pipemaker employing eight persons in 1871 but by 1881 is stated to be a retired publican.

Edward Taylor was apprenticed as a pipemaker in Woolwich in 1851. He became a pipemaker in Plumstead by 1861 but is shown as a 'colour burner' in Plumstead in 1871.

John Stubbs was a pipemaker in Dartford in 1871 but a general labourer in Greenwich by 1881. He was still a general labourer by 1901 by which time he was living in Chatham.

James Rumley employed six men and two women in 1881 but by 1901 was a “Gardener – not domestic” in Dartford.

Francis Robert Harrison in Canterbury in 1891 was an employer and pipe manufacturer with one son, Francis, as a pipe salesman and another son, Frederick, as a fellow pipemaker. By 1901, Francis junior had become a railway engine stoker. Frederick also worked on the railways as a platelayer. Francis senior was still a tobacco pipe maker working on his own account in 1911.

James Jeffreys was a pipemaker in Clerkenwell in 1861 and in Greenwich by 1871. He ended his days in the workhouse infirmary in Dartford in 1881.

George Rumley was a Dartford pipemaker in 1881 and 1891 but an agricultural labourer by 1901.

Some pipemakers probably moved in the search for work:

Henry Phillips was a journeyman aged 17 in Ashford in 1881 and in Chatham in 1891. By 1901 he had moved to Manchester as an employer but returned to Ashford where he worked as a pipemaker on his own account in 1911.

George Edwards, from Oldham Manchester, worked as an assistant to his father who was a pipemaker in Warrington. George moved to Westgate by 1911 where he was described as an ‘ex pipemaker’.

There was just the occasional exception in Kent:

John Hawley is recorded as a victualler in Chatham in 1851, a licensed victualler in 1861 but a licensed victualler and tobacco pipe manufacturer in 1871. By 1871 he employed three men, one woman and one boy but it is not clear in which capacities they were deployed.

It is worthwhile taking one family, the Hunts from Sheerness, and to consider in greater detail their experience of, and responses to, the changing structures they faced.

The Hunt Family

Henry and Sarah Hunt started the family business of pipe making in Sheerness on the Isle of Sheppey, probably in the late 1820s. They moved to Chatham where their son William Henry Hunt worked with his father and an apprentice (Ebenezer Melville) in 1841. William then moved to Sheerness where he remained for the rest of his life; his younger brother Joseph effectively replaced him, living and working with his father in Chatham.

William's business prospered and by 1851 he was living with his wife Caroline in the High Street, Minster, Sheppey. Also living with them was Edward Cropley who was both a pipeworker and a servant. Cropley subsequently moved out of the family home and lived next-door. By 1861 the eldest of William and Caroline Hunt's three sons was apprenticed to his father; by this time William also employed two men. The early 1860s mark the height of William Hunt's pipemaking business.

In 1867 a Post Office Directory indicated that William was involved in byemployment as it described his work as 'a tobacco pipe manufacturer and coffee rooms'. His father seems to have continued to work in Rochester, by now on his own, and is recorded in the 1871 census as still being a pipemaker at the age of 78 years. By 1861 William's brother

Joseph had left home and had stopped work as a pipemaker. Instead he was working as a letter carrier for the Chatham Post Office. It would appear that only William's youngest son, Alfred, born in 1848, continued in the business in Sheerness until the early years of the twentieth century. He was being described as working 'on his own account' in the 1901 Census and so, presumably, was a sole trader.

Another likely member of the family, also called William Hunt, was born in Bury St Edmunds about 1815. Through the 1850s and 1860s he was working as a pipemaker, with his wife Anne as a trimmer, at Overy Street in Dartford. He too did not stay in the trade and by 1871 had returned to Bury St Edmunds as a labourer.

A Henry Hunt born in 1818 and his wife Matilda, born in 1815, can be identified as a branch of this family by use of the family names for their children (Henry, Joseph and Walter) and the link of the family's early history being in Sheerness. Henry worked in Maidstone in the 1840s and 1850s. There are many pipes recovered in Maidstone, especially from the Fremlin Walk development, which carry the initials HH and which are of AO types 28 and 29 which are appropriate for Henry Hunt's dates. No other assemblages of pipes have been found which are of the types and locations that could suggest manufacture by the Hunt family. Henry Hunt died in the late 1850s. Matilda became first a needlewoman and then a laundress and lived in Chatham. It appears that none of their sons became pipemakers: one son, James, worked as a servant in an inn in Sheerness in 1851 while another, Walter, lived with his mother, employed as a labourer, in 1871.

The decline in the commitment to the industry came quite speedily. The Hunt case study and the thumbnail sketches give some pointers towards the responses of the Kent pipemakers from the middle years of the nineteenth century. In the Hunt family, only one apprentice with no family connections to the trade was accepted after 1840. Family members did not tend to stay in the business, for example John Brown became a carpenter while Frederick and Francis Harrison chose careers in the railways. Some left the industry after a

long period as clay tobacco pipe workers. Often they took jobs that did not require a high degree of skill. William Barstow, for example, became a general labourer, but was unemployed at the time of the 1881 Census. John Stubbs and Walter Hunt also became labourers. Some former pipe makers appear to have been able to make little provision for their families. The widow, Matilda Hunt is one example. James Jeffreys was clearly destitute at the end of his life when he lived in a workhouse infirmary.

Perhaps the demand for pipes in the *locale* of Kent fell more rapidly than it did elsewhere. Certainly there is some indication that Kent was a relatively affluent part of England and so the committed pipe smokers of the county may have been marginally more willing to pay extra for the superior smoke offered by briars and meerschaum pipes. The maps shown as *Figures 22 and 23*, pages 259 and 260, give some support to this contention that in Kent in the early twentieth century agricultural wages were comparatively high for the south of England and there were relatively few paupers as a percentage of the population.

In the years before *c*. 1850, pipe workers had some positive agency – they could become employers or take on apprentices; they could migrate and find work elsewhere; and they could utilise the improving transport links to ensure regular supplies of clay and so reduce the need to hold large stocks. The falling demand for pipes which faced pipemakers in the second half of the century was to undermine the basis of the industry. The developments in faster and physically stable transport could have made it easy for larger, London-based, pipemaking businesses to sell pipes in Kent and vice versa. However, it is relatively rare to find clay tobacco pipes in Kent that can be identified as originating in London. Of over 4000 pipe bowls studied in this research, only six carried the name of Charles Crop, a significant pipe manufacturer in London – four were found in Greenwich and one each in Dover and Canterbury. The only record of London pipes being taken by water into Kent was for John Hopkins, a pipemaker in London's Mile End, whose name appears once in the ledgers for the Allington Lock on the Medway. On 22 July 1846 he sent two boxes of pipes to Tonbridge. Perhaps the lack of a

concentrated, industrial market for pipes in much of Kent made this an unattractive target for the larger manufacturers. It seems that the competition from briars and meerschaum pipes and then from cigarettes presented more serious challenges, such that the clay pipe makers were unable or unwilling to confront them effectively. Many pipemakers had spent their lives in the post Napoleonic world where making clay pipes was a viable living. This must have been a poor preparation for the changes which were about to overwhelm the industry. They had learned deep-seated values and beliefs, which Bourdieu calls *doxa*; these were to be eroded. The fundamental economic basis of their lives was to become threatened by the new smoking media. This seems to have been perceived by Kent pipemakers as a situation they all shared – what Giles refers to as "*habitus* embodied in groups" (Giles 2000, 11).

The response in Kent seems to have been the same throughout the county. Marriage and apprenticeship agreements show that pipemakers had a long history of maintaining good communications across the industry. Nonetheless, there is little evidence that the threats after 1850 provoked any widespread cooperative or co-ordinated plan of action. Two Kent journeymen pipeworkers were members of London Journeymen Tobacco Pipe Makers Trade Protection Society: John Longworth and William Andrews. Both men lived in Plumstead in 1901: Longworth, born 1841, as a boarder with former pipemaker William Luckett; and Andrews, born 1839, as a lodger with pipemaker Henry Stubbs. Stubbs made a pipe to celebrate the London dock strike of 1889 (a specimen is available in the Hammond collection, seen 2009); whether this was a paid commission or an indicator of political conviction is not certain, but his contact with a member of the Protection Society does suggest he was active in his support of the Journeymen's cause. Both Longworth and Andrews had worked together in Muswell Hill (Woollard 2007, 22). Given their ages and the date of this Census material, it is likely that any attempt to defend their trade under the auspices of the Protection Society might have been taken well before 1901 and in Highgate, north London, where they had worked previously. There is evidence of some industrial action taken to defend the clay pipe workers. A national body, the Clay Tobacco Pipe Makers' Association for England and Wales took action in

1892, but according to the Board of Trade Report the membership amounted to only 166 workers whose average weekly pay was £1 02s 06d (Board of Trade 1894, 221 and 234).There were regional unions in Scotland and Ireland and smaller groups in London and Rainford, but there is no direct evidence of union activity specifically in Kent. However, a printer's proof of a membership card for the Dartford Tobacco Pipe Makers' Society has recently been discovered (Baker 2014, 50). It is hand dated 1846 and modelled on a card for a Cambridge Tobacco Pipe Makers' Society. Ownership of such a card may have served to introduce journeymen workers as suitable employees or as worthy potential recipients of charity. There is no mention of the cardholder having served an apprenticeship. At this time, there is no proof that the Dartford Society was ever established and recruited members.

As the competition faced by the clay pipe industry intensified, for most pipemakers the solution was to leave the industry. In a time when there was no unemployment benefit and where poverty and parochial support was a seriously unattractive proposition, the majority of pipemakers had to find alternative ways of making a living. This was a rational if hard decision; for many it meant denying the value of their training (as apprentices) and may well have provoked difficult family situations where sons chose not to follow the family trade. It must have been a time of disappointment and distress with no obvious or easy resolution apart from making a decision to leave the industry.

There is good evidence in Kent of pipemakers downsizing their businesses, shedding employees and often becoming quite literally sole traders until age or a lack of custom or rising debts forced closure. In leaving the industry, the pipe workers seem to have exercised the only agency they could contemplate. In terms of the pipe industry, this was negative agency at work. The pipe workers saw a structural fall in demand for clay pipes. Their decisions to leave the industry had the effect of reducing supply. They could not have anticipated the fact that the accelerating fall in demand would outstrip the reduction in supply. In the market for clay pipes in Kent in the latter half of the nineteenth century, the fall in demand was the dominant

structural change and pipe workers clearly felt that it could not be resisted. Their decisions would have structural impacts elsewhere, for example in the market for pipe clay in Southwest England and in the availability of local unskilled labour.

In terms of the spiral model of the structures experienced by agents (see Chapter Four, pages 87-92), working life must have been perceived over time as a succession of pieces of bad news of such severity that most workers were driven to the conclusion that the only way to provide for a family was to take whatever other work may be found. In these circumstances, perhaps the hoopla model enables a wider context to be understood (see Chapter Four, pages 93-95). In this model, the initial dominant structural change was the problem of falling income resulting from reduced sales of pipes. Doubtless an almost simultaneous consequence of this would have been a growing awareness of other powerful structures – these could be shown as more hoops in close contact with the pipeworker. These would have included: the need to find money for rent; the need to settle pressing debts; the importance of collecting any debts due to the pipeworker; and the unsettling realisation that if you worked on your own and fell ill, there may be nobody who could generate the family income.

The newly dominant structures they perceived threatened the livelihoods of pipe makers. In Kent, the workers seemed to have acquiesced; there is no evidence that they took actions which might have retarded the decline of their industry. Rob Stones puts this well and could have been writing about the Kent pipemaking situation: “structure enters into the constitution of the agent and from here into the practices that this agent produces. Structure is thus a significant *medium* of the practices of agents.... Structure is also, however, the *outcome* of the practices of agents” (Stones 2005, 5). Here in Kent’s pipe-making industry is indeed a duality of structure, where changing structure and agency respond to each other and reinforce an evolution in society.

Alternative Pipemaker Response 1: To Compete More Aggressively

Were there any alternative strategies? One possible way forward focuses on an attitude to competitors. In a declining market, it seems essential to win for your business whatever custom exists. There is a fundamental need to keep your product in the public mind through advertising and for your product to be identifiable and distinct from the products of competitors. Kent pipemakers made little use of advertising. Many makers are listed in trade directories but only two Kent pipemakers have been identified who used the option of buying advertising space in trade directories (see *Figure 24*, page 261). In Melville's Directory of Kent (1858), William Lunnon, working in Maidstone, makes a point of noting that his location was near the barracks; this could indicate a significant market for his pipes. Lunnon seems to have died in the late 1850s and his widow, Elisa, continued the business, employing four lads in 1861, but the business closed in the 1860s. Charles Birchall's advertisement in the same directory also gives a Maidstone address. He offered 'fancy pipes of every description' and made a point of saying that he supplied shops. Although the Birchall family was active in pipe making in several places in Kent in the first half of the nineteenth century, there is no record of Charles Birchall continuing to trade after his listing in Kelly's Directory for 1862.

One way in which a pipemaker's products could be made more competitive is to make pipes where the maker can be identified, by initials, name or perhaps distinctive decoration. Using the study of Kent pipes made for this research, *Table 18*, below, shows the number of pipes seen that were made in Kent after 1840, which indicated any features that could permit the maker to be recognised by users or sellers. Atkinson and Oswald pipes have been used here as only fifteen pipes were seen from the Oswald typology for this period and so have been disregarded.

Table 18: Features on Kent Pipe Bowls Made After *c.* 1840 Which Might Identify the Makers by Initials or Decoration

TYPE	TOTAL NUMBER OF PIPES FOR EACH TYPE	No. OF PIPES WITH MAKERS' INITIALS *	No. OF PIPES WITH ANY DECORATION *
AO 29	127	60 (47%)	82 (65%)
AO 30	312	6 (2%)	232 (74%)
AO 31	3	1 (33%)	1 (33%)
AO 33	233	105 (45%)	110 (47%)
TOTAL	675	172 (26%)	425 (63%)

** Some pipes show both decoration and makers' initials: the two columns are not mutually exclusive.*

Before the middle of the eighteenth century it was quite rare in Kent for a pipe to show the maker's initials on the spur or heel of a pipe. It became more common in the late eighteenth century and through the nineteenth century but still after 1840 only the minority of Kent pipes included the makers' initials (see *Table 18*, above). The inclusion of the maker's initials on the spur or heel of a pipe is hardly an imposing form of branding but it does indicate some need or willingness to enable a product to identify a maker.

A number of pipes do carry the surname and the location of the pipe maker; twenty-eight different examples have been seen in the Hammond collection or in depositories in Kent. Showing the maker's details on a mould would not incur any additional cost in manufacturing pipes, but the effectiveness of adding surname and location is not clear. Most pipes in the late nineteenth century were sold through retail outlets such as tobacconists and public houses. The larger producers outside Kent distributed literature to retailers illustrating the range of pipe designs they made. Relatively few pipes appear to have been sold directly to smokers although Chris Baker claims Thomas Pascall sold directly to the public from his house near Overy Street in the first half of the nineteenth century (Baker 1979, 11). It is unlikely that tobacconists would be tied to a single supplier of clay pipes – indeed, as advertisements 2, 3 and 4 in *Figure 24*, pages 261-262, suggest, it was in their interest to sell a

range of smoking requisites and to keep up to date with changes in taste. Pipe retailers would have little compunction in reducing their order of clay pipes if these were no longer selling well.

For makers in smaller towns, the addition of name and town may have been sufficient for the maker to be located. In larger towns sometimes the street is also moulded. In the late nineteenth century, Hill is one maker who included on some of his pipes the name of his street, 'Bloomfield Road', as well as his town, 'Plumstead'. Other makers in south London did the same (e.g. the makers Grout and Williams who added "Clifton St. SW" on some of their pipes). Hill was also unusual as some of his most highly decorated pipes (showing a claw and egg design) included the advertising slogan "Smoke Hill's" which clearly targeted the final user. However, not every claw and egg mould used by Hill included this encouragement; the Hammond collection has examples from both moulds. Stephen Caiger notes other makers who added advertisements for tobacco (e.g. Ben Nevis Cut Shag on a pipe found in Crayford); presumably the pipe or mould maker received some consideration for this service (Caiger 1976, 16). Quite possibly the advertising pipes were given away when the tobacco was bought from a tobacconist or tavern (Hackwood 1909, 381).

Table 18 (page 197) includes all forms of decoration. Some examples are simple ribbing and narrow seam decoration. At the other extreme are bowls showing such complex decoration as Masonic symbols, the faces of famous people and the depiction of events or sports. It might be thought that decoration could be a significant way in which pipes may be identified with a maker and so, conceivably, purchaser loyalties could be cultivated. There is no great evidence for this. An AO29 pipe made in the middle of the nineteenth century and held at Greenwich Heritage Centre wishes its user a 'Merry Christmas and a Happy New Year'. It bears no indication of the maker and well-wisher. Perhaps such pipes were designed to win loyalty for the distributor of the pipes rather than for their manufacturer.

Some makers were sufficiently concerned with the attractiveness of their pipes that they had their designs registered or patented. Peter Hammond has made a study of these designs. He noted that the first ornamental design was registered in 1859; earlier registrations were largely for new functional qualities in the pipes, such as devices for filtering the smoke (Hammond 1988, 8). Very many designs were similar, for example a soldier with a rifle was registered by several makers but with few significant differences between the designs. Clearly some pipe makers deemed that registration or patenting was worthwhile. However, the similarity between many patented designs does suggest that circumvention was not difficult. Nonetheless, registration gave a three-year monopoly for innovations, so registering an original design might prove worthwhile. For the period 1842 to 1883, Hammond lists 124 fully registered ornamental designs for pipe bowls with a further 175 bowls registered between 1884 and 1914.

Hammond notes that some pipes were registered within days of the events they commemorated. He goes on to say “a number of pipe manufacturers were particularly keen to gain monopolies in the production of various designs..... competition must have been very fierce” (Hammond 1988, 121). If this is true, then competition was overwhelmingly intense in London where 204 registrations and patents were recorded. In addition, Middlesex and Manchester had forty each. Some patents were applied for by firms located outside the United Kingdom: Germany initiated seventeen registrations and France one. Five registrations or patents were taken out by firms in Scotland and in Wales and Ireland one each. The key point for Kent is that no pipe maker in the county applied for a patent or a registration or used a trademark. Perhaps a factor was the predominant and persistent rural character of the distribution of population in Kent which meant there were few concentrations of people which could support multiple pipe-making businesses. Armstrong demonstrates the continued rural character of Kent: “between 1861 and 1911, ... 35 English and Welsh counties showed declines in the aggregate populations of their respective rural districts. Kent, with a ten per cent increase, was not one of these” (Armstrong 1995, 47). In this Kent, and probably other home counties such as Sussex and Surrey which also failed to

generate any pipe patents or registrations, was atypical of most counties. Preston quotes from Kelly's Directory of Kent for 1913 to emphasise that the county was "not remarkable for any great manufactures" (Preston 1995, 122). However Preston is right to acknowledge that Thames-side and the Medway valley did have some areas with significant industrial development in the late nineteenth century; areas where competition between the pipemakers could have developed. Again, London was advancing into Kent and might have provided opportunities where the density of population could well sustain a competitive pipe industry. If one accepts that patents and registrations reflect a degree of concern about competition, or where patenting was more worthwhile, then Kent pipemakers seem remarkably reluctant or unable to compete.

There seems to have been no real competition between Kent makers in terms of decorated bowls. Of all the examples of bowl decorations listed in *Table 16*, page 254, there are only eleven cases where more than ten examples of similar decoration are found. Quite possibly most Kentish makers sought to satisfy the demand for ordinary pipes and felt they could not compete in the manufacture of more elaborate bowls which probably faced a smaller demand or which might fall quickly from fashion (as with the depiction of famous faces). Also, the few pipes with greater decoration that were required might now be obtained from beyond Kent. The relatively new rail network could offer gentler handling of delicate pipes than hampers and horses could afford. Even for ordinary plain pipes, unmarked by makers' initials, the railways could have facilitated competition that the Kent makers would find hard to defeat.

Alternative Pipemaker Response 2: to Fight for Trade Through Building a Larger Business

Perhaps further evidence for the failure of Kent pipemakers to exercise competition and originality is seen in the fact that no Kent maker at any time employed more than eleven people. Census evidence shows that seven pipemakers employed four or more workers in the period after 1851:

Martha Andrews, widow of pipemaker Joseph Andrews, employed seven men and four women in Deptford in 1851

Michael Martin employed four men in Woolwich in 1851
Henry Dudman employed five men and two boys in Plumstead in 1881
John Hawley employed three men, one woman and one boy in Chatham in 1871.

In Dartford's Overy Street there was a succession of employers who continued to operate relatively large pipe-making businesses:

Thomas Pascall is recorded as employing five men and two apprentices in 1851
William Sandy employed eight persons in 1871
James Rumley had six men and two women working for him in 1881

The norm seemed to be to employ family members first, and then to use journeymen or unskilled help at need.

Elsewhere in the United Kingdom much larger pipemaking businesses were established in several regions. These larger firms beyond Kent should be seen more in their regional than in their county setting. Pat Hudson notes that "both economic structure and human agency during this period (of the Industrial Revolution) in all important aspects, operated at a regional level" (Hudson 1989, 2). She accepts John Langton's view of regions as "areas of economic and social cohesion and cultural identity" (Langton 1984, 150). Kent is unusual as it is largely circumscribed by the Thames, the Channel and the presence of London and might claim to be isolated and distinctive both as a region and as a county. Any industries or large firms beyond Kent could not grow easily overland into that county. Localities on the edge of London (Lewisham, Deptford, Catford, Charlton, Greenwich and Woolwich) did show some change in character with workers tending to be more mobile than were workers elsewhere, but even here no dominant pipe-making business emerged. This is not the place to debate regionalism, however it should be remembered that the larger pipe-making businesses in the UK are set more in regional areas than in areas defined by county boundaries.

A consideration of some of the features of the larger pipemaking businesses should reveal any different agency the owners deployed in other regions or

whether they enjoyed any significant structural advantages that were missing in Kent in the later years of the nineteenth century. An extensive tabular summary was created of some of the most significant features of fifteen of the largest pipemaking businesses in mainland Britain. An extract for the firm of Pollocks of Manchester is shown as *Table 19*, page 263. The data from the complete Table permits some conclusions to be drawn about the features of these firms and about the reasons for their apparent success in growing to a large size and then continuing to survive, in many cases, into the twentieth century.

Most but not every large pipe business found advantage in locating near sizeable urban markets and having access to navigable rivers and to the sea which facilitated the import of bulky raw materials and provided the possibility for exporting. Sometimes being long established and known in a location becomes a good reason for a firm to stay put even if the original advantages of a site have diminished.

Looking at the dates of formation, years can be identified for the start of twelve of the largest pipe manufacturers on mainland Britain. All were set up in the nineteenth century with seven established after 1850. Only two were not trading into the last quarter of the nineteenth century. Few went through a lengthy gestation; most speedily became large businesses. So, at a time when clay pipes were under increasing threat in Kent, some relatively large entrepreneurs were opening and extending substantial new premises elsewhere. Where dates can be determined, the average life of these businesses was 84 years. Some were limited liability companies where succession of ownership was not challenged by the death of a shareholder, but most remained family businesses led by successive generations. Several experienced a financial crisis but continued trading under the original name, or a recognisable development from it (Gallagher 1987, 67). The overwhelming majority were still active in the twentieth century and five continued to trade (albeit on a reduced scale) into the 1950s or later.

As might be expected, the last pipes made in Kent seem to have been made by three sole traders after the First World War: James Hams active in Folkestone until *c*. 1930 (Kelly's Directory of Kent, 1930); Richard Hinkins working in Chatham until *c*. 1940 (Williams 1980, 240); and William Luckett's business in Plumstead, possibly still functioning perhaps as late as 1948, by which time Luckett would have been over 80 years of age (Woollard 2007, 26).

Size mattered to the larger businesses outside Kent and this can be seen in the extent to which they benefitted from the economies of scale. Elementary economics theory claims one significant benefit of the economies of scale to be a greater ease for large firms to raise capital for expansion or any other investment. In regions beyond Kent support can be found for this economic theory. Pat Hudson notes that "the markets for both industrial capital and for commercial credit were regional before the 1830s and 1840s and the region remained an important financial unit well beyond these decades" and that "the bulk of finance raised by industrialists came from their locality.... from within a network of commercial, social and familial links" (Hudson 1989, 16). Outside Kent some more substantial pipe-making businesses were able to raise capital relatively easily; for example, John Ring of Bristol traded as Ring and Cookworthy in the early nineteenth century: Cookworthy was an entrepreneur, mainly a haberdasher, who provided the financial backing to John Ring (Price 2012, pers. comm.). Within Kent, there was little tradition of investment in industry. Much capital was tied up in agricultural land and the repeated divisions of property caused by the inheritance system which prevailed in Kent (gavelkind) made sure that few agricultural units were rich enough to be able to offer capital to industry. There is no evidence of substantial sums ever being made available to finance the growth of a Kent pipemaking business, although London capital could have been a potential source.

The economies of scale bring other potential benefits to larger firms. As a firm expands it should be possible to use the division of labour within the workforce and to benefit from the skill enhancement this practice often encourages. This might be inferred for Christie's works in Glasgow. These

were described in 1891 in ‘Glasgow and its Environs’ as having “some forty hands (who) find employment in the *several* departments” (my emphasis). In addition, Stratten noted that Christie kept “three travellers constantly on the road”; presumably these were permanently engaged as sales representatives (Stratten 1891, in ‘*Glasgow and its Environs*’, quoted in Gallagher 1987, 66).

As significant consumers of raw materials, the bigger firms might use their market power to obtain low prices for clay and coal. Also large firms could trial diversification with minimum risk to the business. A number of larger firms made toys and scouring stones alongside pipes; Lincoln’s of Norwich was more adventurous and included matches, blacking and inks in its range of products (Davey 1979, 295-352). New pipe designs could be created and registered. Here Charles Crop of London was especially prolific with 108 registered between 1842 and 1883 and a similar number again between 1884 and 1912 (Hammond, 1988). A large firm can afford extensive and wide-ranging advertising and be able to respond to new patterns of demand following a successful campaign, always assuming a suitable distribution network is available. The firm of Ebenezer Church was one of several which advertised in trade journals and published extensive pattern sheets and price lists (Hammond 2009, 225-248).

One obvious advantage of the economies of scale is that size should reduce the costs of production for the larger firms. The costs per pipe for large firms were likely to be below those experienced by smaller firms. This could have enabled the bigger firms to compete by price reduction in the later years of the nineteenth century. Because the pipes from smaller firms were becoming relatively expensive, their businesses were more susceptible to changes in market demand and many closed. This could assist the larger firms further in terms of cost reduction as there would be a growing pool of unemployed pipe workers who might be recruited at need but at low rates of pay. There were occasions when the low pay of workers provoked some industrial action, for example the strike focussed on the Hawley pipe-making firm in Bristol in 1889 (Roger Price 2012, pers. comm.). However, collective action by pipe workers was not a common phenomenon and none is known within Kent.

There is some evidence of the purposeful manner in which most of the larger firms responded to the decline of the pipe trade. They were active in their exploration of new methods of production, using powered machinery in some of the early processes of pipe production, notably in the preparation of the raw clay before the shaping and moulding processes began (for example, at Edwin Southorn's Broseley Pipe Works). In Glasgow, "by 1891, thirteen (of the purpose-built clay pipe factories) were using machinery driven by steam power" (Gallagher 1987, 62). Some larger makers benefitted directly from the closure of smaller businesses and bought their stock and moulds. Pollock's, as late as 1942, took over the equipment and some employees from the firm of Joseph Holland in Manchester (Jung 2003, 98).The larger makers were frequently exporters, perhaps utilising a benefit of their coastal or riverside location. The bigger firms were proactive in their marketing strategies within the UK and beyond. Most exporters tailored the design or decoration of their pipes to the nature of the intended market. Arguably exports to some more remote locations replaced some of the lost trade in the home market. For example, Blake's of London selling pipes to Australia, New Zealand and to the West coast of Africa (Jung 1986, 9). Nonetheless few businesses would start with a plan to export pipes – it might have provided a way to grow the market or a path to retain demand if the home market declined, but, mindful of the increasing risks, few businesses in any area of commerce begin with a plan to trade at a distance from place of production.

Larger businesses diversified into other products made from pipe clay, the most simple being bubble pipes and fairground targets for shooting ranges. In London some made cigarette holders out of pipe clay: one possible find has been made on from the Thames foreshore (Jarzembowski 1984, 14), while some late Victorian bowls were so tiny they were designed to hold cigarettes. However, nothing that could be confirmed as a cigarette holder has been shown to have been made in Kent. This diversification seems to have been the preserve of the firms beyond Kent.

Bigger firms didn't simply diversify they exploited an advantage that clay pipes had over briars and meerschaums in that they could introduce multiple copies

of new designs relatively cheaply and quickly and so offer a more up-to-date smoking medium than any other. Larger pipemakers elsewhere did exploit this unique selling point (see Advertisement 3, *Figure 24*, page 261, featuring Crop's pipes modelled on the boxers Jem Smith and John L. Sullivan). Towards the end of the nineteenth century, Kent makers produced pipes that were shaped to imitate briar pipes (e.g. AO30 – over 300 such bowls have been recovered in Kent), but this seems to have been the limit to their response.

The more successful enterprises outside Kent advertised extensively, usually to wholesalers or the licensed trade and not to the wider market of pipe smokers. They frequently emphasised their large product range in publicity materials. They also often offered for sale additional goods that were not made of clay. Two examples of growing awareness of a need to advertise and to diversify were used repeatedly in the trade journal 'Tobacco' for 1889 (see *Figure 24*, Advertisements 3 and 4, pages 261 and 262). Charles Crop and Sons of London simply added to their advertisement that they were "importers of every description of tobacconists' fancy goods". Their advertisement refers specifically to their registered pipes. McLardy from Manchester still described their business as a 'tobacco pipe manufacturer' but also as a "walking-stick merchant" and, somewhat surprisingly, listing amongst their specialities 'silver-mounted *briars*' and "M.A.C. Brand Egyptian *Cigarettes*" (my emphasis). This is one of the very few examples of an attempt of a clay pipe manufacturer to offer for sale the new smoking media.

The larger firms that were to evolve in other industries such as iron and steel might have provided the example for the Kent pipemakers to follow. The juxtaposition of timber (for fuel and for charcoal) and iron ore in the Weald had encouraged a substantial iron industry in Sussex and Kent; it reached a peak in about 1590 with "fifteen furnaces in Kent out of forty-nine or fifty in the Weald as a whole" (Zell and Chalklin 2004, 76). However the depletion of Kent timber reserves, the use of cheaper coal as a fuel, and then the discovery of the way in which coke could replace charcoal in smelting cost Kent the continuation of the industry and so the loss of the model of larger

iron and steel businesses. By 1700 only four furnaces were still active in Kent (Preston 2004, 113). It does seem that the loss of the example of this industry to Kent was in part an accident of geology. It was to be one factor helping to explain the failure of Kent pipemaking businesses to expand in the nineteenth century.

There are parallels that may be drawn between the early pipe and the iron industries. In Kent, in the seventeenth century, “most ironworks employed regularly fewer than a score of workers” (Zell and Chalklin 2004, 76). Thus, iron and steel in Kent initially was not creating units of output much larger than those found in the pipe industry. Firms in the iron industry in the new locations beyond Kent enjoyed a continued succession of ownership within a family, as did pipemakers in Kent. Illustrations of this can be seen in the Brooke and the Darby families in Coalbrookdale, Shropshire (Belford, 2009). Another parallel was that marriages cemented relations between families working in the same trade. For example, three generations of the Darby family ran the Coalbrookdale ironworks in the eighteenth century. All shared the Christian name Abraham. Richard Ford married Mary, daughter of Abraham Darby I and Richard Reynolds married Hannah, daughter of Abraham Darby II. Ford and Reynolds managed the family business during the interregnums when the Darby children were too young to inherit. (Raistrick 1950, 128, 129). The Darbys, Reynolds and Ford families were Quakers. Within Kent, there is no evidence of a strong Quaker presence in pipemaking, but it is interesting to note that elsewhere some of the larger pipemaking businesses were dominated by Quaker families; for example, the Rings of Bristol (Price 2012, pers. comm.) and the Whites of Glasgow (Gallagher, 1987).

By designing the first pipes, applying a gin press and in firing the clay, the early pipemakers showed similar dynamic entrepreneurial attitudes and approaches to those who established their iron foundries beyond Kent in the seventeenth century. Basil Brooke, who was active in Coalbrookdale in the early seventeenth century, provides a good illustration of one such iron maker. Belford described him as someone who would “observe a technology in action, experiment with it in a methodological fashion, make it work and

then successfully market and sell the resulting product in the most profitable way" (Belford 2008, 96) A significant point of difference was that the later Kent pipemakers did not continue to initiate new technologies whereas the iron makers remained much more willing to investigate and apply new practices (such as smelting with coke rather than coal). Steam engines were introduced in the mid nineteenth century in the iron and steel industry, as at Wednesbury Forge (Belford 2010, 40) and at the larger pipemakers, such as Pollock in Manchester (Jung, 2003) and Southorn in Broseley (site visit, August 2008); they are not recorded in the Kent pipe industry. The ability of iron makers to raise the capital to finance their businesses gave them a potential and effective agency beyond that of pipemakers. Certainly the iron industry required larger investment than the clay tobacco pipe industry. There is evidence for this earlier in the eighteenth century when George Kearsley produced a 'Table of Trades' in 1787 and included the 'sum required to set up in business' for pipemakers at between £20 and £30; Campbell's The London Tradesman (1747) suggested a figure between £20 and £50 was required. Neither writer recorded figures for an iron smelter but Kearsley suggests £300 to £2500 was required for setting up as an iron founder. Strictly speaking, a founder casts molten metal rather than smelts it, but these figures do give some idea of the difference in the level of initial investment required between a pipe maker and somebody smelting iron.

Another structural limitation experienced by the pipemakers concerned the good they made. They produced a final product, with very few alternatives that might be made from the same resources in their localities. Iron and steel are not end products; they require further stages in production before useful items are made. Belford, writing of the Staffordshire iron and steel works of Wednesbury Forge, describes the dominant final product changing from the early eighteenth century saws, to guns for the military years towards the end of that century. After Waterloo, edged agricultural tools (such as scythes and shears) came to dominate the output (Belford 2010, 39 and 40). This was a flexibility that would have been much more difficult to achieve for pipemakers working in small-scale production. The quantity of raw materials required and the growing demand for goods made of iron encouraged large-scale output.

Early Kent pipemakers did share some approaches and life characteristics of the iron makers. However, from the eighteenth century they lacked the example of sizeable production units that iron and steel might have provided. The pipeworkers' *doxa* and the nature of their product militated against a more proactive approach to the organisation both of production methods and of the pipe industry in Kent.

What Restrained the Kent Pipemakers?

Given the effectiveness of the larger firms when faced with a declining sale for clay pipes, it is necessary to review what held back the development of firms in Kent. Coastal sites along the Thames, the English Channel and the Medway provided potential locations for larger pipe-making businesses. The size of the London market might be seen as a tempting market for new or expanding pipe businesses, but no evidence has yet been found for pipes being carried by river from Kent to London. The county of Kent was in itself a sizeable market but one more dispersed in character than London. By 1911, the newly formed county of London had a population of over four million; only nine English counties had populations exceeding one million and one of these was Kent (Mitchell 1988, 30-31). Probably the London market for pipes was never attractive for Kent makers if only for the reason that it was always well served by London-based makers. Oswald's list of London makers of all dates covers 20 sides in *Clay Pipes for the Archaeologist*; the list for Kent covers less than two sides (Oswald 1975, 30-49 and 174-176).

The distribution of Kent's population lacked the concentrations that could be found in the industrial North and this limited the incentive to produce on a larger scale. Kent certainly lacked the proximity to mineral resources enjoyed by Northern and Western firms. As *Figure 25*, page 265, shows, early in the twentieth century, and probably in the nineteenth century too, coal, as a source of power, was relatively expensive throughout Kent; this in itself might discourage significant industrial development away from Thames-side sites.

Few of the late-formed and long-lasting substantial pipe-making businesses went through an extended period of growth from the size of a sole pipemaker.

Most attained a large size relatively early in their history. There appears to have been a mindset shared by many in Kent that did not easily countenance the idea of large businesses. There were a very few entrepreneurs who began to operate sizeable plants in other industries in Kent in the nineteenth century. In the main, these businesses grew large too late to provide an example for members of the pipe industry. The biggest enterprise was the naval dockyards that employed over 4000 workers at sites in Chatham, Sheerness, Woolwich and Deptford in the early eighteenth century, but these could hardly stand as beacons of commercial activity (MacDougall 2004, 134). There are some examples of true entrepreneurship where businesses grew to create large-scale production. John Penn developed a marine engineering business in the area of Deptford Bridge (ironically the location of many pipe-making businesses at the end of the eighteenth century). Penn's business prospered and covered 7 acres in the area of Blackheath Hill in the 1870s (Grace's Guide: John Penn and Sons. Undated). Ralph Franklin opened a brewery in 1861 that became the largest in Kent and used a five-floored building in Maidstone (Dover Kent Archive: Fremlins. Undated). A German firm set up a factory in Woolwich led by William Siemens. In 1884, this business was large enough to undertake the manufacture of the cables used in transatlantic communications (Grace's Guide: Siemens Brothers and Co. Undated). J. and E. Halls was an exception as a large business which grew from a small beginning. It began as a one-man Dartford business started *c*. 1785 making foundry-based products such as boilers and gun carriages. In the late nineteenth century the business extended into refrigeration engineering and, by 1910, employed around 850 people (Dartford Town Archive: J. and E. Hall Ltd. Undated). When firms such as these became large, the Kent clay pipe industry was already in steep decline, as *Figure 21* shows (page 185, above).

Conclusion

Larger businesses in any trade in Kent were exceptions. Sizeable firms seem concentrated on the north of the county and in Maidstone. More widely in Kent few businesses were large employers. The pipe industry in Kent was too well established as one based on small units of production to consider change. This failure of the pipe industry to create possibly new but certainly larger

units of production seems to have been crucial in ensuring that the industry declined rapidly in Kent. Most larger clay tobacco pipe businesses beyond Kent were established by the end of the third quarter of the nineteenth century. Perhaps this was the pivotal time which condemned the Kent industry to an early demise. By the end of the century, the Kent makers had lost much of their traditional markets and had no obvious source of capital to diversify, even within the range of other artefacts made from clay.

The changing structures facing pipemakers seem to have been unexpected and rapid in their effects. There was little pipemakers in Kent appeared able to do to resist the competition from other media or to adapt their industry to offer new goods. Perhaps there is some parallel here with the speed of introduction of internet shopping in the early twenty-first century – where there was no adaption of the product, or change in marketing strategy, nor any protective co-ordination across their industry, many formerly secure high street businesses faced a speedy decline and closure.

The expanding pipe making industry of the early nineteenth century quickly collapsed in Kent. The pipemakers in Kent were overwhelmed by the scale and speed of the structural changes affecting their industry later in that century. In retrenching and downsizing, then leaving the industry, their negative agency worked with the changing structures to ensure an accelerated decline to pipe making in Kent. Marcia-Anne Dobres has written that “structuration is the on-going production, maintenance and transformation of societal institutions as well as the material, social and symbolic conditions within which people exist and through which they reproduce and transform themselves” (Dobres 2000, 133). In the process of this ‘ongoing transformation’ of agent and structure, the late nineteenth century social institution of the Kent clay tobacco pipe industry floundered and quickly finished.

There is an alternative explanation. Maybe the pipeworkers were restrained by a strong belief in the security of their employment. Their thinking might have been dominated by knowledge that had been built over many years and

was now unquestioned: that smokers would always want new clay pipes. The basis for such a view would have been reasonable. Tobacco smoking was addictive and so there was a demand for pipes. Clay pipes were easily broken and would need replacement frequently. These pipes had a competitive advantage over those made from briar and meerschaum which, while being more durable, were more expensive too. From a clay pipemaker's viewpoint, a state of persistent demand was a fundamental *doxa*. They had no reason to doubt the viability of their industry. Historically demand for pipes had fluctuated but it had always revived. By the mid nineteenth century the industry was flourishing (as witnessed by the rise in number of new makers in Kent – see Figure 9, page 143 and Figure 21, page 185) There was no pressure to look for new technology or to seek fresh marketing methods. Pipemakers could not see how cigarettes would grow to become the dominant medium for smoking and, as late as 1889, neither could the Tobacco Press (see this Chapter, page 184). Perhaps the pipemakers in Kent, perceiving no pressure to change and lacking the local example of large-scale production methods, were sensible to assume any new fashion would prove no more a threat than had snuff. The realisation that this was a serious misjudgement came too late to save their industry.

CHAPTER EIGHT – CONCLUSION

Introduction

This conclusion will outline what this thesis has uncovered about the structures and agencies at work in the Kent clay tobacco pipe industry; it will offer a critique of the theoretical stance taken and of the methodology employed. Finally it will locate this research within the compass of pre-existing researches and indicate where, following my research, further work is required.

The Clay Tobacco Pipe Industry of Kent

This thesis set out to bring into focus the changing fortunes of the clay tobacco pipe industry of Kent. It has done this by exploring three distinct phases in the livelihoods and prospects of the clay tobacco pipe workers.

1600 to 1760

While the period 1600 to 1760 was characterised by significant structural changes in the wider domestic history of the country, the increasing numbers of Kent pipeworkers were able to build their industry and to enjoy some material success. Their agency was apparently little affected by larger scale changes originating outside the industry; they were able to focus on the opportunities afforded by the recently introduced habit of smoking.

In this initial period, the workers in the pipe industry facilitated the speedy adoption of smoking by manufacturing commercially the key implement required. Having perceived the new requirement for smoking pipes, they responded to the demand. The first pipe makers in Kent and elsewhere must have had some experience with ceramics but there is no direct evidence for this in Kent. The early pipe industry in Kent was innovative – it existed to serve a habit never seen in Kent before the late sixteenth century and developed a technology that proved effective and efficient. The research has shown that in this initial phase the pipemakers in Kent were concentrated in the larger centres of Canterbury, Maidstone and Rochester.

The thesis has demonstrated that the families working in this new industry may well have been risk takers, frequently trading a recently introduced product in towns hitherto without access to pipemakers. However, they were prudent in their exercise of agency, to the effect that some used byemployment to reduce their dependence on the new and largely imported good, tobacco. Where there were structural difficulties in pipemaking, as with ensuring a reliable supply of clay, the pipeworkers of Kent perceived the risks and took appropriate action to overcome them. The stocks of clay held by the pipemakers were considerable; their management of the problem of irregular supply of clay secured the availability of pipes for the early Kent smokers. The fact that pipes across the county were of a similar design at any one time suggests a degree of communication and contact between the pipeworkers.

A detailed study of probate inventories for both pipemakers and other Kent traders indicates that, in terms of what they owned, most families engaged in pipemaking before 1760 could be equated with what Weatherill called ‘high status traders’ (Weatherill 1988, 180). At least in Kent in the earlier years of their history, and in terms of material possessions, the workers appear to have aspired to and achieved a degree of domestic comfort; this was an unexpected discovery during this research. Research into the probate inventories of other counties might establish if pipeworkers beyond Kent and of this period were similarly prosperous. Many Kent pipeworkers owned the utensils required for the enjoyment of other imported goods still new to the county (such as tea, coffee and sugar). The pipemakers’ relatively high ownership of horses, pack saddles and hampers gives an indication that the makers also took some responsibility for pipe distribution. Although the capital outlay required to become a pipemaker was not high, there is no evidence in Kent that the early pipemakers were amongst the poorest in society who might have grasped this new means of earning a living.

1760 - 1850

The next hundred years saw periods of international change and challenge; the fluctuating success of pipe workers and of their industry reflected these upheavals. Towards the end of this period, in conditions of greater stability,

the pipe workers could exercise positive agency and maintain a successful industry.

Arguably pipeworkers in the late eighteenth and early nineteenth centuries failed to build on the success of their early history in Kent. There is little evidence that the workers in the pipe industry in Kent responded actively to the exogenous challenges of the second half of the eighteenth century, when fashions moved in favour of snuff, when trade figures show that international events made the supply of tobacco less secure and when the nation's concentration was on war in Europe. The evidence outlined for the first time in this study indicates a fall in the number of workers joining the industry in Kent at this time. In the late eighteenth century, there is little indication of any proactive changes made by pipe workers apart from a reversal of the previous trend for increasing the average volume of the pipe bowls. Similarly, there was little development shown in the technology deployed once the industry had become established. The minor changes that were introduced were not peculiar to Kent. These included the addition of a knifing slot into moulds to create a clean lip to the bowl (and so remove the need for bottering or other finishing of the lip) and, later, to add moulded designs (frequently leaves or cereals) alongside the seam to reduce the need for trimming the pipe after moulding. These were minimal refinements which slightly reduced the demand for workers, but at a fundamental level pipes were made in an identical fashion in the late nineteenth century to the method used in the early seventeenth century.

Although the locations of known pipemakers were often separated by some distance in the second half of the eighteenth century, the making of marriages, the linking of families through apprenticeships and the movement of workers to places of potential employment (sometimes moving beyond the home county of Kent) indicate that both communication of news and movement of people was a feature of the industry. Innovative biographical case studies, such as that for William Swinyard, show a growth in geographical mobility at this time, sometimes, but not exclusively, reflecting the search for employment. As towns, and especially London, grew, a trend

long established in other industries extended into pipe making as the workers grouped together in the urban areas across Kent. Subsequent research on pipemakers in other counties may discover if this was a widespread trend among urban pipeworkers. While the pipeworkers may have benefitted from improvements in the reliability of supply of raw materials, there is no evidence that the workers in Kent used the developing transport links to extend their markets.

It would appear that this was a time close to stagnation in the industry. The excavated ceramic evidence from pipeworker domestic residences suggests that, compared with the records of the earlier probate inventories, by the middle of the eighteenth century there had been some erosion of their living standards, but that the pipeworkers retained a concern for the public view of their lifestyles.

1850 onwards

The decline in work opportunities in the Kent pipe industry was brought about by the creation of serious competition from the new smoking media of briar, meerschaum and cigarette. These proved a greater threat to the pipe workers in Kent than the structural changes occurring earlier on an international scale.

From the second decade of the nineteenth century, with the return to peace in Europe, the demand for pipes rose. The thesis demonstrates the social significance of bowl variations within types for this period, with the most common variations from types favouring a reduced volume until after the Napoleonic wars. In Kent the frequency of changes in bowl shapes was replaced by an increased incidence of bowl decoration. This, and the use of patents, suggests a more competitive atmosphere in the industry, nationwide. The nature of the competition in Kent was focussed between the pipemakers themselves and did not effectively challenge the new media for smoking. Perhaps the Victorian pipemakers in Kent lacked the example of larger businesses found beyond the county; perhaps they were too slow to respond to change and to develop larger units of production. Their history and fundamental *doxa* excluded the possibility of a change in scale of production.

They certainly lacked conspicuous wealth with which to fund investment in new techniques or in larger premises. As this thesis has shown, the wealth and determination could be found in other industries outside Kent, paradoxically they include the iron industry which once was a significant industry in Kent but which had moved elsewhere well before the nineteenth century. The thesis has demonstrated the factors present in some large-scale pipemaking businesses beyond Kent that could not be emulated by Kent's small-scale producers and which might have permitted their longer survival.

There was no conspicuous attempt by pipeworkers to resist or to accommodate the new smoking media in the mid nineteenth century. The response of pipeworkers seems to have been that, if the traditional methods of production were proving less effective in the marketplace, the unit of production should first downsize and then disappear. If apprentices are not needed or recruited, the long-term effect will be a decline in the number of workers. This research explains for the first time what happened in Kent where the pipe industry, faced with a fall in demand in the second half of the nineteenth century, matched this by reducing supply and this in turn led to a speedy decline of the industry. The decision taken by individual pipeworkers across the industry in Kent favoured flight rather than fight. When faced with new constraining structures, the workers in the industry did not come together to display significant economic or political strength. Perhaps these late pipeworkers lacked the finance or the energy to resist the new structures of competition in smoking media. In consequence, except for isolated individuals, there were no workers in this industry in Kent by the start of the First World War.

Theory

Early in this research, it became clear that the adoption of a theoretical stance would help establish the focus being sought. In taking structuration theory as the main theoretical base for this thesis, it took a theory that was flexible. As accepted by Giddens (1989, 294), structuration is not a rigid prescription of how research should proceed. The theory raises issues, in particular the relationship between structure and agent. It also invites a consideration of

how a society evolves as agents respond to their perception of the structures they experience. Structuration acknowledges that agency may not achieve the ends intended by the agent. This is a dynamic theory founded on the notion that change occurs and can be studied. Others have found it helpful to use a diagrammatic approach to the application of structuration (for example, Riley and Yoward, 2001, 86). In sympathy with that approach, this thesis has introduced new and helpful illustrations.

In that the theory was malleable, it is important to show how the theory has been understood, amended and, at times, challenged. Chapter Four made the case for introducing a degree of separation of structure from agent within structuration theory in order to facilitate significant study of both elements in the duality. Others in the future may choose to focus on this question and discover a way in which active agency and structural change may be viewed at the same time. Chapter Five took up the hoopla model, which was developed in Chapter Four, in order to study the varied strengths of the structures to which the pipeworkers were exposed before *c*. 1760. It helped to separate those structures that impinged on the consciousness of the workers from those, possibly equally powerful, of which the worker was at least temporarily unaware. The hoopla model was again helpful in Chapter Six in identifying the variety of structures experienced in the Burstow family. The spiral model, which was not used in Chapter Five, was of some help in exploring the experience of structures over time in the Swinyard study. Both models were valuable in Chapter Seven where the pipe trade failed: the workers were increasingly aware of the tightening financial structures they faced and of their own sense of powerlessness in these circumstances. Throughout this thesis, and across the entire duration of the pipe industry in Kent, economics in various ways has been seen as the source of the most significant structural constraints and opportunities experienced by the pipeworkers.

Structuration proved an effective model by stimulating the creation of relevant *aides memoires* and by prompting reflection on the nature of structure and of agency in a changing society. It provoked the formulation of questions and

encouraged the exploration of areas of study. This theoretical approach tends to be used where the area of study is relatively limited geographically, for example in Joyce's work on Monte Albán (Joyce, 2000). As discussed in Chapter Four, structuration does not exist in a pure form, ready to be applied to any situation considered by archaeologists. It has greatest power in obliging the individual researcher to think about the relationships between agent and structure in society, and is an approach not previously applied in a substantial study of the clay tobacco pipe industry. In this thesis, structuration theory was extended in the hoopla and spiral models. Trying to analyse the wide range of intentions and the differing strengths of agents amid the mass of changing structures in a complex society is hugely difficult and probably impossible. All that may be done is to note where it is possible to isolate and study elements of these relationships and to acknowledge that our understanding will be partial at best. The success of the hoopla and spiral models lies in their ability to encourage insightful thinking, given the data uncovered. As research tools they are not perfect, but that is also true of the parent theory itself. They may not be immediately of value to researchers elsewhere, but may stand as a record of the thinking undertaken by me when seeking to apply structuration to a particular industry and time and place. Others have established different developments of structuration that proved helpful in their study (for example, Taylor who writes of "a modified theory of structuration", Taylor 2003, 129) but the process of thinking through structuration is in itself an enabling procedure that both deepens and facilitates the study being undertaken.

Methodology

After considering the merits of structuration, it is appropriate to think about the effectiveness of the methodology employed.

Having determined on a study of the pipe workers in Kent, it was necessary to amass a considerable amount of data about clay tobacco pipes themselves. In doing this, and simultaneously beginning an exploration of the documentary evidence, the shape of the industry became clearer and the appropriate areas for questioning became more apparent. This meant that, although the artefact

data recording sheet used (developed from Higgins and Davey, 2004) was entirely satisfactory, a good deal of the data recorded there has not been used, while some of the data (on variation from types of pipe, for example) acquired a significance unanticipated when the data was collected. Occasionally, as with the measurement of the volume of pipe bowls, some features of the pipes were not recorded when the bulk of the relevant data was accumulated initially. Obtaining additional data meant visiting some sources a second time.

In part, the creation of the database required me to build a reliable, effective and inclusive typology. Refining two widely used London based typologies produced a satisfactory single typology for Kent pipes, the first time that the county's clay tobacco pipe production has received this level of study. It was necessary to remove pipes very rarely found in Kent (less than 1% of all the pipes studied for this research). The eventual typology of thirty types proved secure. It permitted this study to go beyond merely demonstrating a new typology to show that types of bowls and variations from them could be used to reveal something of the changing nature of Kent society.

One significant limitation concerns the artefactual data. Very many pipes carry no indication of the maker. There are no initials on the spur, nor any mark on the base of the bowl. The pipes are simply plain. There is no certain way to establish whether these were pipes made by an as yet unknown maker or by someone whose name is known in Kent but who, perhaps for some commercial reason, left some or all of the pipes unmarked with his or her initials. Most of the pipes which lack indentifying initials were made before 1760, a time when quite possibly many makers saw little need or advantage in adding their name or initials. This thesis suggests that the growing tendency to show initials after this time may reflect a rise in competition between the pipe makers; this proposal deserves further attention using data from other regions.

Documentary sources have been important in this thesis. They have been shown to be archaeological artefacts in their own right, capable of revealing

and of concealing relevant data. In terms of suggesting details of the lives of the pipemakers, the probate inventories have been particularly useful. The degree of continuity afforded by census returns and directories has been helpful. Because documentary sources are so diverse, no single database could be created from them. Some, such as probate inventories, had not been considered at the start of the research. Although many documents have proved easy to locate, some, for example those using the independent research of others, have been unpredictable in their usefulness and sometimes difficult to track down. Where data is available in a common form (as broadly is the case with probate inventories) a searchable spreadsheet, specifically created for this study, proved an effective research tool.

The use of a variety of documentary sources has facilitated the creation of relevant and detailed biographic case studies, the first time such an approach has been applied in historical archaeology to a small-scale industry on a level beyond a single family firm. By examining a number of biographies the range of individual and familial experiences and forms of agency have been revealed. These have highlighted various structures faced by the clay tobacco pipe workers of Kent and have helped make known some of the ways in which their agency was exercised. Case studies have revealed a good deal about the geographical and occupational mobility of pipe workers as they exercised agency to respond to changing structures such as the power of kinship systems. They have drawn attention to the involvement of women in this industry. They have shown something of the cross-generation nature of the technology deployed in the pipe industry in Kent. In so doing they have illustrated times of success and of challenge within the industry by providing examples of occasions when non-family members were recruited and other instances when family members chose not to join the household business. They have been useful in providing some evidence for changing trends and social conventions over time.

A significant result from the use of documentary data has been the creation of the list of over 640 named workers who were active in the Kent clay tobacco pipe industry between the seventeenth and twentieth centuries (*Table 20*,

pages 272-291). Never before has such a large body of data been assembled for Kent; it more than quadruples the previous list of known workers that had been put together forty years ago (Oswald 1975, 174-176). The new list has the benefit of stating sources, dates and locations more clearly than in the original list and has informed this research throughout.

Structure and Agency

Throughout this thesis some structures have been constantly at the front of the awareness of the pipeworkers (i.e. in contact with the pole, in the hoopla model). These have been factors like the supply of raw materials, especially pipe clay, the nature of the demand for pipes, the likely degree of profitability if an employer, and the active acceptance of byemployment when there was uncertainty about the security afforded by pipe making. Such related and recurring themes demonstrate the special significance of economic events and activities on the lives of pipeworkers. Occasionally the pipeworkers have been involved with other structures such as the relationships with neighbouring pipe workers, the availability and types of additional staff (e.g. the availability of journeymen and of potential apprentices) and the alternative means of consuming tobacco (including snuff and cigarettes). By using structure and agency, some of the key limitations and opportunities for pipemakers have been made explicit and they can thus be evaluated.

As agents the pipeworkers have been problem solvers, even if the solution was to leave the industry. They have a *doxa* to provide for the family. They have known what works in their industry and maybe became risk adverse in adhering to successful but historical technology and business structures. Clearly the pipeworkers had ways of communicating with other pipeworkers elsewhere and so were able to track employment possibilities and to copy pipe designs.

The question is how, through the close interplay of structure and agency, society was able to evolve. In small ways evolution was possible – the rapid and widespread acceptance of pipe smoking was a fundamental change in social practice; pipeworkers were instrumental in giving this effect. In deciding

to move towards areas of concentration in towns, the pipeworkers affected, with other noxious industries, the development and quality of life in some urban areas. In using decoration, the pipeworkers enabled smokers to display their interests and affiliations in a way never possible before. But these were small-scale social changes achieved, sometimes by design, by a small-scale industry.

Historiographical Fit

This study has used structuration to help organise the thesis and enhance cohesion. Structuration has enabled the reader to be aware of the essential orientation of the thesis. The development of my work has benefitted from writers such as Taylor (2003) who attempts to integrate structuration with the substance of his archaeological evidence. He applies the language of structuration through his writing and uses a diagram where ideas have been developed that depart from original statements of structuration theory. A similar approach has been used in this thesis in Chapters Five, Six and Seven which develop the archaeological history of the clay pipe industry in Kent. Clearly, however, in this study it has been necessary to explore the theory before considering the archaeological material. This is especially true for the overarching shape of the thesis which presented early discrete chapters on methodology and theory (Chapters Two and Four respectively). Although the contents of these chapters is integrated with examples drawn from Kent's pipe industry, they do not seek to provide the detailed account and analysis of the industry provided in the later chapters. In adopting this pattern, this thesis acknowledges the approach used by Sassaman (2000) and by Giles (2000).

In Summary

This study set out to show something of the structure and agency of pipemakers in Kent over three hundred years. It has questioned the assumption that pipemakers in Kent were always amongst the poorest in society, although, as their industry collapsed in Victorian times, it is very likely that pipemakers were poor and the industry unwelcoming or unattractive to new recruits (as shown by the number of children who did not continue in the family business). It has demonstrated how the pipe industry responded to

social and political changes and to events in international politics and economics. This research acknowledges a degree of inter-dependence amongst workers in this industry and argues that after *c*. 1760 pipeworkers in Kent may have become complacent and ineffective in their attempts to influence their own future and that of society. An alternative, and perhaps more sympathetic, conclusion is that, after so many years of secure, if fluctuating, demand for their products, pipeworkers were understandably blind to the threats posed by cigarettes and more durable pipes. In Kent, the pipemakers were unable to comprehend or resist the scale of change that was so suddenly upon them. They experienced the pain of one aspect of capitalism, the free market in action. To protect themselves and their families, pipeworkers had to look elsewhere for a livelihood.

Arguably the Kent pipe makers were early exponents of two essential elements of the Industrial Revolution: mass production and the division of labour. From the start, pipemaking families could make several thousand pipes in a week with the tasks of manufacture frequently divided between family members. After taking this initiative and being at the front of industrial production methods, the pipeworkers were apparently isolated from the changes taking place elsewhere. While other small-scale industries developed new, faster and larger production methods, often outside Kent, the pipe industry within the county made few changes. Having been at the forefront of the Industrial Revolution, the Kent pipemakers were, at the end, left behind, unable to adapt and change.

This thesis has examined the clay tobacco pipe industry in an original manner by concentrating on one region and those who worked in it, rather than focussing on the regionality of pipes themselves. In addition, it is the first to apply structuration theory to the clay tobacco pipe industry. The fact that it proved necessary to consider structure and agency separately does not undermine the theory of structuration but does question the mechanics of how structuration may be applied to effective research in historical archaeology.

For the most part, the questions postulated in the Introduction (Chapter One) required complex answers. They have determined the direction of this research and suffuse this thesis. The thesis has done what it set out to do: “to move forward the state of knowledge” about the Kent clay tobacco pipe workers (see page 2). It is not the definitive account of that industry in Kent but hopefully provides elements of an introduction to that account. It raises issues and provides evidence and analysis that others with fresh research may challenge or extend. This thesis is a first step on a pathway yet to be more fully mapped and explored. My hope is that the largely forgotten people who made clay tobacco pipes in Kent are a little better understood now, and that they and their fellows in other counties will receive greater attention in future.

APPENDIX 1

SHOWING TABLES AND FIGURES WITH CHAPTERS OF PRINCIPAL RELEVANCE

Table 1: Data Collection Sheet Used for the Survey of Pipe Related Artefacts in Kent (page 1 of 2)

Site	Context or SF No.	Bowl									Decoration			Typology		
		B	S	M	Bore Dia /64"	Burnish F G A P	Inside Mark	Milled 1 2 3 or 4	Bottered or Cut	Heel or Spur	Bowl Decoration	Seam Decoration	Stem Decoration	AO Type	Variant	Os Type
Dover Sewers DSR-91	3	*	*		5				C	S				25		
Deptford, Seagar Distillery	482	*	*		7	G		3		H				4		
Woolwich Dockyard	WD73 IxF133	*	*		4				C	S	Anchor & chain to Lt, sailing ship to Rt	Oak leaves on Front narrow leaves to Rear		28		
Greenwich High Road	GWH01.15	*	*	*	4				C	S						12
Maidstone, Fremlin Walk	55	*	*		4				C	S				28		
Lee High Road	1091	*			7	G				H	Uncertain stamp on heel			2	Variant	
Maidstone, 37 High Street, 1999	cess pit	*	*		6					H					Variant	6
Sandwich, Potter St.	211	*	*		5				C	S	11 ribs each side start 7/16" from top	Widely spaced wheat Front & Rear		28		

KEY:

B = bowl
S = stem
M = mouthpiece
* = is present

F = fine
G = good
A = average
P = poor

The numbers 1, 2, 3, 4 under "Milled" relate to the number quadrants of the bowl that are milled

H/S = a heel (H) or spur (S) is present

Table 1: **Data Collection Sheet Used for the Survey of Pipe Related Artefacts in Kent (page 2 of 2)**

Site	Context or SF No.	Maker				Comment	Source	Photo?
		Maker Mark	Left letter	Right letter	Where if not H/S			
Dover Sewers DSR-91	3	HN	H	N		Both initials crowned with tree symbol. N reversed.	CAT	Yes IMG3205 7 June 2010
Deptford, Seagar Distillery	482						PCA	
Woolwich Dockyard	WD73. IxF133	TC	T	C			GHC - located sites	
Greenwich High Road	GWH01. 15	SS	S	S			LAARC	
Maidstone, Fremlin Walk	55	HH	H	H		Simple cut mouthpiece	Maidstone Museum	
Lee High Road	1091	??			Under heel	V rough (?weathered) surface. Bowl 3/16" shorter than type	PCA	
Maidstone, 37 High Street, 1999	cess pit					Broken heel with uncertain incuse letter - possibly S. Taller variant by 1/4"	CAT	
Sandwich, Potter St.	211	HK	H	K		Bowl badly damaged	Keith Parfitt	

Based on the recording sheet created by
David Higgins and Peter Davey (2004, 487-490)

CAT = Canterbury Archaeological Trust
PCA = Pre Construct Archaeology
GHC = Greenwich Heritage Centre
LAARC = London Archaeological Archive and Research Centre
Keith Parfitt = CAT and Advisor to the Dover Archaeological Group

Table 2: **A SUGGESTED TYPOLOGY REFLECTING THE PIPES RECORDED IN KENT**

Number of AO bowls identified	Atkinson and Oswald Typology	Dates covered		Oswald Typology	Number of Os bowls identified
0	1	1580	1610	(1)	
5	2	1580	1610	(2)	
4	3	1580	1610		
24	4	1610	1640	(3)	
63	5	1610	1640	(4)	
2	6	1610	1640		
2	7	1610	1640	(16)	
1	8	1610	1640		
25	9	1610	1640		
154	10	1640	1660	(5)	
7	11	1640	1670		
351	12	1640	1670		
140	13	1660	1680		
8	14	1660	1680		
154	15	1660	1680	(17)	
1	16	1660	1680		
2	17	1660	1680		
100	18	1660	1680	(7)	
		1660	1680	6	12
		1660	1680	18	4
		1660	1690	25	2
70	20	1680	1710	(8)	
		1680	1710	9	89
		1680	1710	26	0
117	21	1680	1710		
71	22	1680	1710		
		1690	1710	19	2
1	19	1690	1710		
1	23	1690	1720		
4	24	1700	1740		
		1690	1730	20	1
		1700	1740	10	50
		1700	1740	21	0
865	25	1700	1770		
		1730	1760	27	0
		1730	1760	11	14
		1730	1780	12	111
		1730	1780	22	28
42	26	1740	1800	(23)	
294	27	1780	1820		
		1780	1820	13	0
		1810	1840	24	3
		1820	1840	14	10
239	28	1820	1840		
127	29	1840	1880	(15)	
233	33	1840	on		
0	32	1840	on		
		1850	1900	29	9
311	30	1850	1900		
		1850	1900	30	6
3	31	1850	1910		
		1850	1900	28	4
*Total 3400**					*Total 329**

= Type rejected given infrequent occurrence

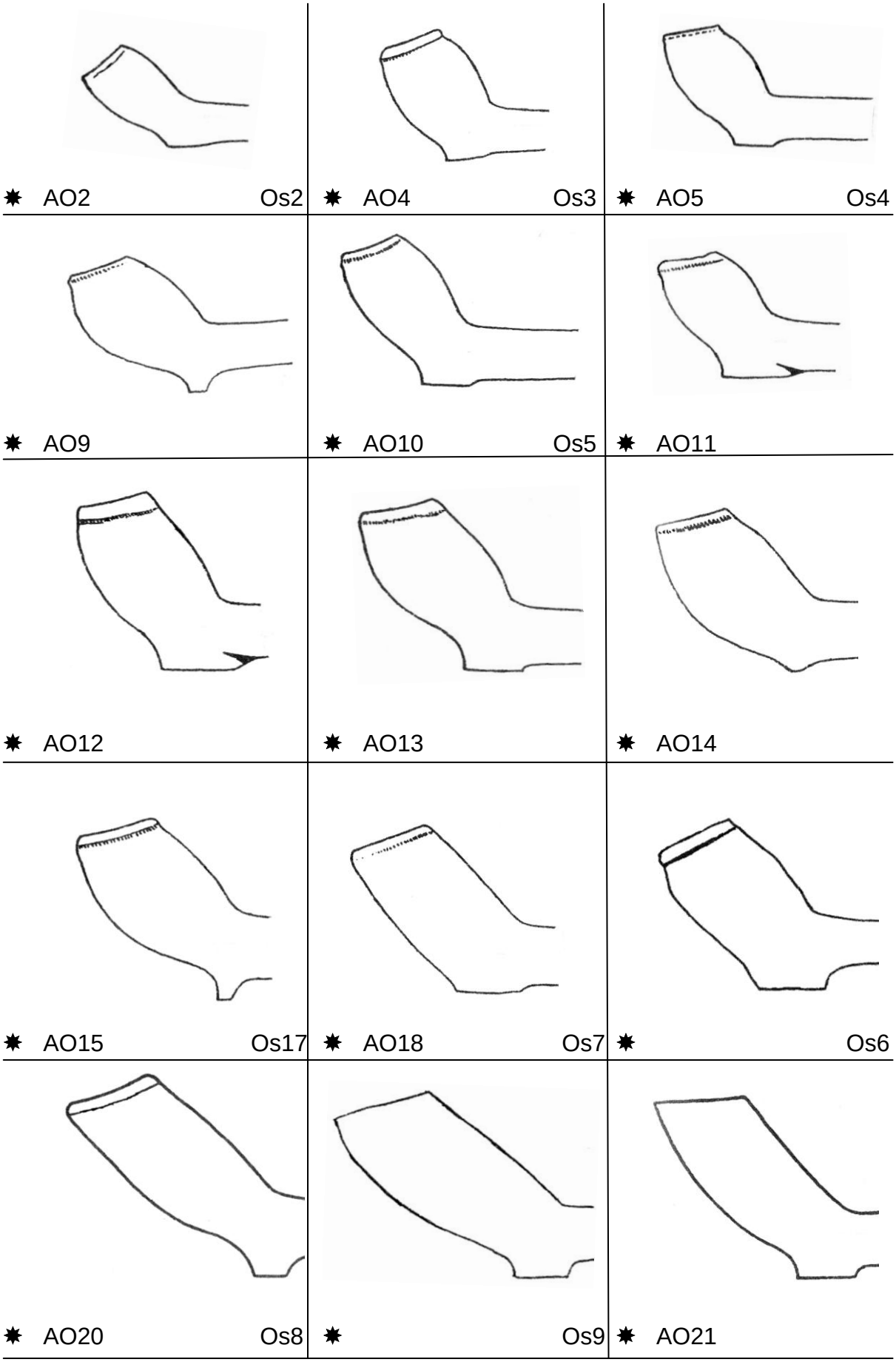
*The totals are for the bowl types where five or more pipes have been examined.

NB The sequence shown for the Oswald typology reflects the fact that he presented his drawings in a sequence determined by the presence or absence of heels or spurs. The Atkinson and Oswald sequence is largely determined by the date of first use for each type.

Where there is a slight mismatch between AO and Os datings, AO has been shown.

Where the AO type numbers are preferred, the Os equivalent is shown in brackets.

Figure 6 **AN ILLUSTRATED TYPOLOGY OF KENT CLAY TOBACCO PIPES (page 1 of 2)**



The symbols show dates of manufacture: ✸ = before 1760, ❖ = after 1760, ⅄ = spans 1760

(referred to on page 163)

Figure 6 **AN ILLUSTRATED TYPOLOGY OF KENT CLAY TOBACCO PIPES (page 2 of 2)**

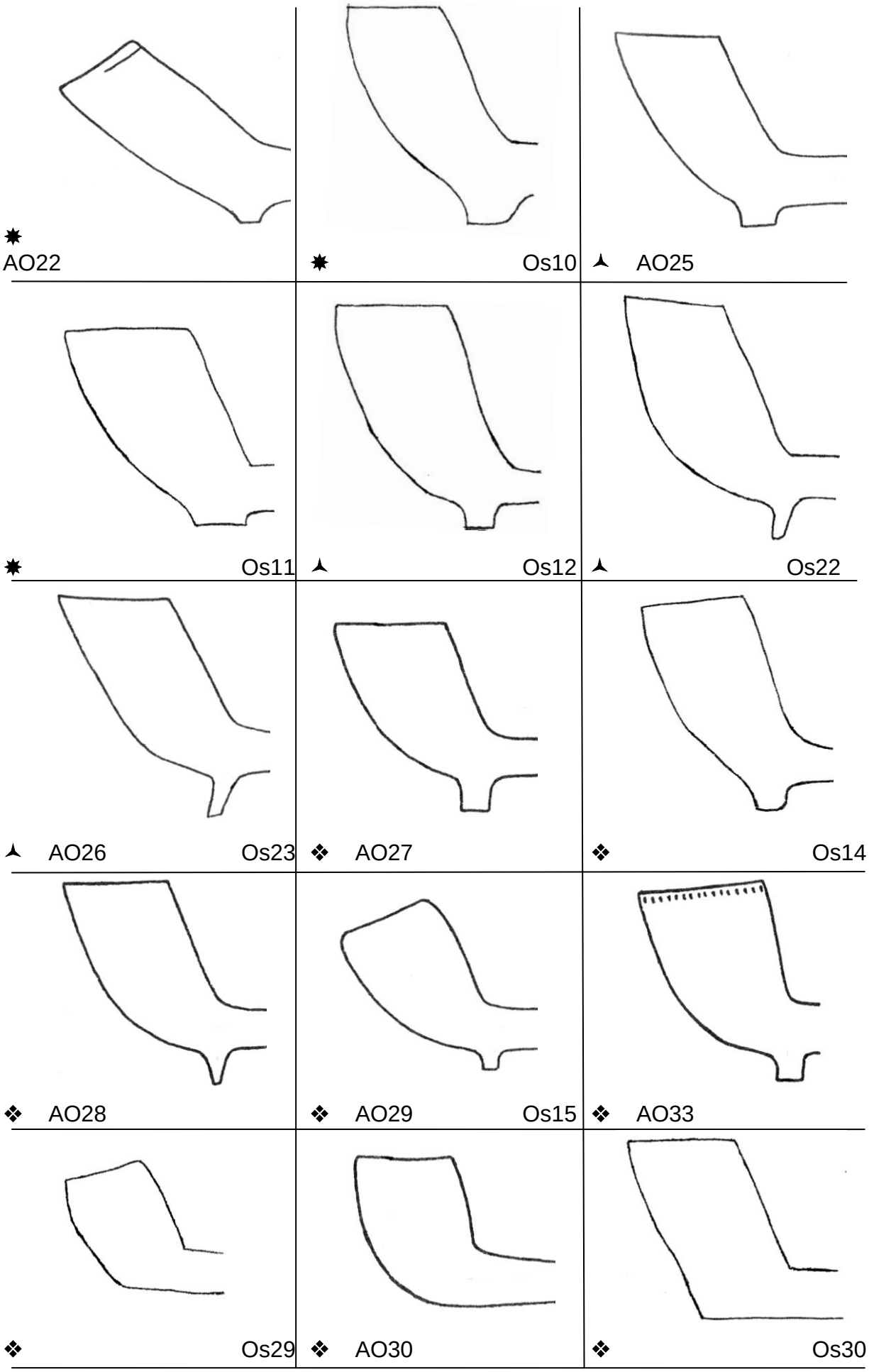


Table 3: **BRITISH ARCHAEOLOGICAL REPORTS:**
The Archaeology of the Clay Tobacco Pipe

The series has been edited by Peter Davey, apart from No 18 where the co-editor was David Higgins and No 17 where the sole editor was David Higgins.

1, *Britain: the Midlands and Eastern England.* 1979. Edited by Peter Davey. BAR British Series 63.

2, *United States of America.* 1979. Edited by Peter Davey. BAR International Series 60.

3, *Britain: the North and West.* 1980. Edited by Peter Davey. British Series BAR 78.

4, *Europe 1.* 1980. Edited by Peter Davey. BAR International Series 92.

5, *Europe 2. Pt. 1 and Pt. 2.* 1981. Edited by Peter Davey. BAR International Series 106.

6, *Pipes and Kilns in the London Region.* 1981. Edited by Peter Davey. BAR British Series 97.

7, *More Pipes and Kilns from England.* 1982. Edited by Peter Davey. BAR British Series 100.

8, *America.* 1983. Edited by Peter Davey. BAR International Series 175.

9, *More Pipes from the Midlands and Southern England.* 1985. Edited by Peter Davey. BAR British Series 146.

10, *Scotland.* 1987. Edited by Peter Davey. BAR British Series 178.

11, *Seventeenth and Eighteenth Century Tyneside Tobacco Pipe Makers and Tobacconists.* By Lloyd Edwards. 1988. BAR British Series 192.

12, *Chesapeake Bay.* By Dennis J. Pogue. 1991. BAR International Series 566.

13, *Clay Tobacco Pipe Industry in the Parish of Newington, Southwark, London.* By Colin Andrew Tatman. 1994. BAR British Series 239.

14, *The Development of the Clay Tobacco Pipe Kiln in the British Isles*. By Allan Peacey. 1996. BAR British Series 246.

15, *The Kaolin Clay Tobacco Pipe Collection from Port Royal, Jamaica.* By Georgia Lynne Fox. 1999. BAR International Series 809.

16, *Negotiating African-American Ethnicity in Seventeenth Century Chesapeake*. By J. Cameron Monroe. 2002. BAR International Series 1402.

17, *Pollocks of Manchester: Three Generations of Clay Tobacco Pipemakers.* By S. Paul Jung Jr. 2003. BAR British Series 352.

18, *The Dynamics of Regionalisation and Trade: Yorkshire Clay Tobacco Pipes c. 1600-1800.* By S.D. White. 2004. BAR British Series 374.

19, *Les Pipes de la Guarantine: Fouilles du Port Antique de Pomeques (Marseille).* By Philippe Gosse. 2007. BAR International Series 1590.

Table 4: **Topics Visited by Articles in *The Newsletter of the Society for Clay Pipe Research* 2002 – 2012. (page 1 of 2)**

Application of new scientific techniques	81														
Clay	79														
Collections	70	72	73	81											
Documentary sources on individuals	62	63	65	66(2)	67(2)	68	69	73	74	75(2)	76(2)	79(2)	81		
Excavated Pipes/Groups	64	65(2)	66(2)	68(4)	69(2)	70(3)	71	73(2)	74(2)	75	76	77	78	79(2)	80(2)
Foreign Pipemakers	64	73	76	77(2)	79										
Foreign Pipes & pipe equipment	64	65(2)	67(2)	70	71(2)	73(2)	74(4)	76	77	81(3)					
Foreign pipes found in UK	71														
Individual Pipes	65	66	67	68(2)	69(3)	72(2)	73(2)	76	78(3)	79					
Information about named pipemakers	63	64(3)	65	66(2)	67(2)	68	69	70	71(2)	72(5)	73(5)	74(2)	76	77	
Information about smoking or tobacco	62	64(2)	73	74	76	79(2)									
Inns	64														
Kilns & associated pipes	69	70	74	75	80										
Literature, Art & Broadcasts	73	74	75	76(3)	77	78(2)	79	80	81(2)						
Marketing/Distributing pipes	64(2)	81													
Modern Pipes	65														
Moulds	68	75	78												
National Pipe Archive	66	71	81												
Obituaries	62	69	71	73	74	78(2)	80								
People and artefacts relating to pipes	72	73(2)	78(2)												
Pipe furniture	71														

Table 4: **Topics Visited by Articles in *The Newsletter of the Society for Clay Pipe Research* 2002 – 2012. (page 2 of 2)**

Pipe societies (especially, the *Academie Internationale de la Pipe*)	65	68	72	73	76	78									
Pipeclay artefacts	68	69	71	72	74	77									
Pipemaking families/places	64	67	68	72(2)	76	79	80	81							
Publications about pipes & book reviews	65	66	68(2)	69	70	74	76	78(2)	81						
Requests for Information	68	69(2)	71	74(3)	78(2)	79(2)	80	81(2)							
Society News	62	66	68	71	72	73	74	76	77	78	79	80			
Stamps/Marks	69	71	73(2)	74(2)	79(2)	81									
Taxation	64														
The Tobacco Pipe Company	69	78													
Trades Unions	74														
UK pipes found abroad	69	70	72	75(2)	76	77(2)	78(2)	79(2)	80						
UK Regional Studies	65	66	68	70(2)	71	72									
Unusual Pipes	64	70	72	76	77(2)										
Wood and Metal Pipes	64	66	67(2)	68	70	71	75	76(2)	77(2)						

The first two figures refer to the edition of *The Newsletter*. Any figure in parenthesis indicates the number of relevant articles in that edition.

Table 5: **Some Regional Studies of Clay Tobacco Pipes (page 1 of 2)**

Location	Title	Author	Publisher and Date
Barnstable	*The Barnstable Clay Tobacco Pipe Factory in the Nineteenth Century*	Richard Terry and M. Brooks	Devon County Council, 1989
Bristol	*Bristol Clay Pipe Makers*	Roger Harvey Price, Reginald Graham Jackson and Philomena Jackson	Published privately, 1979
Bristol	*Clay Tobacco-Pipes, with Particular Reference to the Bristol industry (History and Archaeology)*	Iain C Walker	Parks Canada, 1977
Bristol	*The Bristol Clay Tobacco-Pipe Industry*	Iain C Walker	Bristol Museum, 1971
Broseley, Shropshire	*Tobacco Pipes of Broseley, Shropshire.*	D R Atkinson	Published privately, 1975
Cambridgeshire	*Clay Tobacco Pipes in Cambridgeshire*	R J Flood	Published privately (?) 1976
Cheshire and Mersey	*Some Clay Pipes from Cheshire and Merseyside*	David Higgins	North West Archaeological Trust, 1987
Essex and East Anglia	*The Clay Tobacco-Pipe in Britain. With Special Reference to Essex and East Anglia*	Laurence S Harley	Essex Field Club, 1976
Gloucestershire	*Clay Tobacco Pipes in Gloucestershire*	Allan Peacey	Published privately (?) 1977
Hull	*Early Hull Tobacco Pipes and Their Makers*	T Sheppard	Hull Museum Publications, 1997 (originally 1912)

Table 5: **Some Regional Studies of Clay Tobacco Pipes (page 2 of 2)**

Location	Title	Author	Publisher and Date
Lincoln	*Clay Tobacco Pipes from Excavations in Lincoln, 1970-74*	Jenny E Mann	Lincoln Archaeological Trust, 1977
Northamptonshire	*Northamptonshire Clay Tobacco Pipes and Pipemakers*	Moore, W R G	Northampton Museums and Art Gallery, 1980
Poole	*The Poole Clay Tobacco Pipes*	A.J.A. Cooksey.	Bournemouth Local Studies Publications, 1980
South Shropshire and North Hereford	*Clay Tobacco Pipe Making and Use in the Seventeenth and Eighteenth Centuries*	Graham Berlyn	Ludlow Historical Research Group, 2008
Sussex	*Sussex Clay Tobacco Pipes and Pipemakers*	D R Atkinson	Eastbourne: Crane Services, 1977

Table 7: **A Specimen Probate Inventory (page 1 of 4)**

Explanations shown in italic font

An Inventory of all his goods and chattels of **Nathaniel Herring** late of the City of **Canterbury**, **Pipemaker** deceased. *(dated elsewhere on the Inventory to 1711)*

		£	S	D
In primus	two pair of racks	0	2	0
Item	two pair of pots	0	1	0
Item	four dozen of wooden grates	0	18	0
Item	one old fire pan, one pair of tongs	0	1	6
Item	two irons for his kiln	0	1	0
Item	four dozen of half a gross boards	0	12	0
Item	one dozen and a ½ of gross boards	0	6	0
Item	three screws and gun heads	2	10	6
Item	three pair of old pipe moulds	0	12	6
Item	three old benches and tubs	0	6	6
Item	seven pair of rakes and poles	0	6	0
IN THE CLAYHOUSE				
Item	one old clay trough	0	5	0
Item	one clay block irons one pair of pots	0	5	0
Item	four leaden weights one old pair of scales and beams	0	10	0
Item	fifteen tubs and casks	0	10	0
Item	one couch bedstead	0	1	6
Item	one wire, one beer cask	0	4	0
Item	three pair of tobacco pipe rips	0	5	0
Item	2 old horse *(horse = a stand for barrels)*	0	18	6

Table 7: **A Specimen Probate Inventory (page 2 of 4)**

IN THE BUTTERY				
Item	Two beer tubs	0	3	0
Item	one kneading trough	0	1	6
Item	one iron pot	0	1	6
Item	one meat bag	0	1	0
Item	old lumber	0	1	0
IN THE KITCHEN				
Item	fourteen pewter dishes, twelve pewter plates, three pewter porringers, two pewter chamber pots, two pewter quart pots, two pewter pint pots, one pewter basin	1	14	0
Item	three brass kettles, one furnace, one brass scummer *(skimmer)*	1	7	0
Item	one jack, one line pulley, one weight	0	12	0
Item	two spits, one brass pan	0	2	0
Item	one little chaffing dish	0	0	6
Item	one hay cutter	0	1	0
Item	one old warming pan	0	1	6
Item	one bell mottle porridge pott	0	3	6
Item	two pair of pothangers	0	2	0
Item	one pair of andirons *(fire irons)*	0	2	0
Item	one pair of creepers *(supports for burning logs)*	0	1	0
Item	one pair of tongs	0	0	6
Item	one cupboard	0	5	0
Item	one tub under the window	0	1	6
Item	one small table	0	2	0
Item	one pair of bellows	0	1	6
Item	one pair of window curtains and rod	0	1	6
Item	17 glass bottles	0	1	6
Item	two old chairs	0	1	0
Item	old lumber	0	0	6

Table 7: **A Specimen Probate Inventory (page 3 of 4)**

ITEMS IN THE LOFT CHAMBER				
Item	one bed, two bolsters, two pillows, three blankets one rug, one bedstead, one mattress, one pair of curtains and valance	5	10	0
Item	one pair of calico curtains	0	2	0
Item	one large chest	0	18	0
Item	one chest of drawers	0	10	0
Item	one old chest	0	1	6
Item	6 turkeywork chairs	0	4	0
Item	two pairs of brass head and irons	0	5	0
Item	one large looking glass	0	5	0
Item	one clock	1	2	0
IN THE GARRETT				
Item	one flock bed, two flock bolsters, one blanket, one coverlid *(bedspread)*, one mattress half head bedstead	0	10	0
IN THE ROOF CHAMBER				
Item	one flock bed, one flock bolster, one feather pillow, one blanket, one rug, one mattress, one ordinary bedstead	0	10	0
Item	two old chests	0	2	0
Item	one round table	0	10	0
ITEMS IN THE STOW ROOM of twenty bushels of ordinary small coal		0	14	0
Item	one and twenty tun and eleven hundred of clay	26	18	9

Table 7: **A Specimen Probate Inventory (page 4 of 4)**

IN THE YARD				
Item	four cords of four foot wood	3	0	0
Item	twenty brass faggots	0	9	9
Item	half a load of rotten wood	0	5	0
Item	one grindstone	0	1	0
IN THE STABLE				
Item	One old horse, two old pack saddles	3	0	0
Item	Five hundred of hay	0	5	0
Item	Lumber	0	1	6
LINEN IN THE HOUSE				
Item	five pairs of ordinary sheets	1	2	0
Item	four ordinary towels	0	1	4
Item	three ordinary tablecloths	0	1	6
Item	three ordinary pillowcoats *(pillowcases)*	0	1	6
Item	the lease of the dwelling house	40	0	0
Item	the poles of an acre and a half of hopground	15	0	0
Item	the ready money in the house	1	5	0
Item	goods made ready in the house	0	15	0
Item	good and bad debts	11	17	2
	Sums totalling	**£127**	**12s**	**6d**

Table 8: **Estate values set against size of property**

Pipemaker	Location	Year of Inventory	Value of Estate	Number of Rooms	Other spaces
William Wickes	Dover	1747	£130 15s 6d	9	two cellars and yard
William Lawrance	Faversham	1734	£130 4s 0d	6	cellar
Nathaniel Herring	Canterbury	1711	£127 12s 6d	7	stable
Christopher Legatt	Milton/Sittingbourne	1716	£105 5s 0d	8	stable, loft and coal house
Robert Hornsbey	Canterbury	1715	£101 8s 4d	9	cellar and stable
John Hallaway	Maidstone	1717	£76 11s 2d	8	cellars and coal store
James Boxer	Maidstone	1671	£66 17s 2d	6	cellar
William Tapley	Rochester	1716	£57 11s 6d	5	cellar
Richard Holloway	Maidstone	1716	£49 10s 6d	7	cellar, stable and passage
Thomas Kipps	Deal	1723	£17 5s 0d	4	
Richard Hogben	Canterbury	1702	£10 6s 6d	4 (inferred)	

Table 9: **A social status hierarchy: frequency of ownership of goods in a sample of English inventories 1675-1725**

	Inventory valuations	Inventory valuations	Percentage of inventories showing ownership of these items														
	£ mean	£ median	tables	Cooking pots	Cooking pans	pewter	pewter dishes	pewter plates	earthenware	books	clocks	pictures	looking glasses	table linen	window curtains	utensils for hot drinks	silver
Gentry	320	154	93	84	13	93	55	43	39	39	51	33	62	60	26	7	61
High status traders	193	79	97	75	11	95	54	40	53	45	34	35	62	63	21	7	51
Intermediate traders	157	85	93	77	25	94	62	50	49	24	25	29	56	58	29	10	38
Yeomen – large farms	165	104	91	69	5	95	41	20	33	18	19	4	21	35	5	1	13
Low status traders	92	45	92	74	12	96	56	31	42	17	18	15	37	50	12	4	23
Husbandmen – small farms	32	30	83	57	2	89	33	9	28	4	4	0	9	16	2	1	2
Labourers	16	13	79	79	11	89	57	14	43	4	0	4	4	18	4	0	0
Kent Pipemakers	**79**	**76**	**100**	**91**	**73**	**91**	**73**	**64**	**27**	**27**	**73**	**45**	**82**	**73**	**55**	**27**	**27**

This is a modified extract from Weatherill's Table 8.1 (1988 p168, augmented with data from Table A2.2 p212.).
My data for Kent pipemaker inventories 1671-1746 have been added.

Table 10: **Ownership of linen set against the number of beds**

Pipemaker	Value of Estate	Number of beds	Pairs of sheets	No. of Pillow coats *i.e. pillowcases*	No. of Tablecloths	No. of Napkins	No. of Towels	Other linen
William Wickes	£130 15s 6d	4	12	5	4	4	12	23 other pieces
William Lawrance	£130 4s 0d	3	6			12		
Nathaniel Herring	£127 12s 6d	3	5	3	3		4	
Christopher Legatt	£105 5s 0d	4	14	10	8	36		childbirth linen
Robert Hornsbey	£101 8s 4d	5	8	4	2	15		1 mantle cloth
John Hallaway	£76 11s 2d	4	7	2	4	12	24	
James Boxer	£66 17s 2d	7	14	4		18	6	3 sideboard coats
William Tapley	£57 11s 6d	2	8	3		24		6 shirts & 2 neckcloths
Richard Holloway	£49 10s 6d	3	8	2		24	6	
Thomas Kipps	£17 5s 0d	2						some linen
Richard Hogben	£10 6s 6d	4						small parcel of old linen

Table 11: **Debts set against estate valuation**

Pipemaker	Location	Year of Inventory	Amount of Debt	Percentage of the value of the estate held as debt	Value of Estate
William Wickes	Dover	1747	£15 14s 0d	12.0%	£130 15s 6d
William Lawrance	Faversham	1734	£72 0s 0d	55.3%	£130 4s 0d
Nathaniel Herring	Canterbury	1711	£11 17s 2d	9.3%	£127 12s 6d
Christopher Legatt	Milton/Sittingbourne	1716	*held no debts*	0%	£105 5s 0d
Robert Hornsbey	Canterbury	1715	£12.2s 7d	11.9%	£101 8s 4d
John Hallaway	Maidstone	1717	£10.0s 0d	13.1%	£76 11s 2d
James Boxer	Maidstone	1671	£5 7s 2d d	8.0%	£66 17s 2d
William Tapley	Rochester	1716	£4 3s 0d	7.2%	£57 11s 6d
Richard Holloway	Maidstone	1716	*held no debts*	0%	£49 10s 6d
Thomas Kipps	Deal	1723	£2 0s 0d	11.6%	£17 5s 0d
Richard Hogben	Canterbury	1702	*held no debts*	0%	£10 6s 6d

In percentage terms, this represents a median debt worth 9.3% of the gross value of these estates.

Table 12: Calculations of the Number of Pipes that Could be Created from Eighteenth Century Clay Stores.

The following calculations are based on these conditions:

1. a weight of a fired pipe of the late seventeenth and early eighteenth centuries was between 30g and 40g depending on variation in style (information supplied by David Higgins, pers. comm. 10.10.2012). So a reasonable average weight would be 35g.
2. the loss in weight between a fired pipe and one of prepared clay, moulded, trimmed, and ready for firing would be in the order of 25% (information supplied by pipemaker Rex Key, pers. comm. 31.12.2012). So a finished pipe of 35g would require almost 44g of clay.
3. no account is taken for the fact that clay transported from the West Country was moved in a relatively dry state. This clay would contain some impurities which would reduce the weight of usable clay.
4. no account is taken of the fact that the pipemaker would need to puddle the clay before use (i.e. mix with water to provide the consistency that permitted moulding). This would increase the weight of the clay. Subsequent to moulding, the pipes would be left on drying racks which would reduce the weight slightly.
5. no account is taken of clay loss in manufacture, but this is likely to be a minimal figure with waste clay being recycled. Similarly, no account is taken of wasters – i.e. clay used to support pipes in firing and pipes damaged during kiln building and emptying.
6. The calculations are based on these figures:
    - 1 ton of stored ball clay = 2,240 pounds = 35,840 ounces
    - 1 ounce = 28.35 grams, so 1 ton of ball clay = 35840 x 28.35 = 1,016,064 grams
    - 1 pipe requires 43.75 grams of clay so 1 ton of ball clay represents 23,224 pipes

These points show how the precision of the following calculations is likely to be slightly misleading. However, there is no reason to suppose that the calculations are wildly inaccurate. They do demonstrate the degree of protection pipemakers took to withstand potential uncertainties in the supply of clay.

Nathaniel Herring had 21 tons and 11 hundredweight of clay = 21.55 tons, therefore he had enough clay for 21.55 x 23,224 = 500,477 pipes. The population of Kent at the time of his death was about 176,000 (Armstrong 1995, 11).

* William Wickes had 13 tons of clay = 301,912 pipes

Christopher Legatt had 7 tons of clay = 162,568 pipes

Richard Holloway had 4 tons of clay = 92,896 pipes

All the other pipemakers had unmeasured quantities described as ‘some’, ‘parcels’, ‘stock’ or simply referred to as ‘clay’.

** William Wickes also had a store of 24,192 pipes (168 gross) at the time of his death. A similar calculation to the one above shows this represents over one ton of clay.*

Table 13: **THE PIPEMAKING FAMILIES OF OVERY STREET, DARTFORD, 1841-1901**

Year	Adult resident	Occupation
1841	Joseph May	Pipemaker, b1820 Kent
	William Rooke	Pipemaker, lived in Joseph May's house, b1812 Kent
	Thomas Pascall	Pipemaker, lived next to Joseph May, b1797 Kent
	John Wilbrow	Pipemaker, b1821 Kent
	Edward Webb	Pipemaker, lived in Park Place, b1821 Kent
1851	Caroline Burslow	Tobacco pipe trimmer (wife of Charles Burslow), b1808 Seal
	Charles Burslow	Tobacco pipemaker, lived in same house as William and Ann Hunt b1805 Greenwich
	Ann Hunt	Tobacco pipe trimmer (wife of William), b1818 Shooters Hill
	William Hunt	Tobacco pipemaker, b1815 Bury St Edmunds
	Ann Moore	Pipe trimmer (wife of David), b1823 Cambridge
	David Moore	Pipemaker, b1823 Cambridge
	Thomas Pascall	Tobacco pipemaker, employing 5 men and 2 apprentices, b1807 Chatham (wife Ann b1807 Dover)
	William Reed	Tobacco pipe maker, b1825 Dartford (wife Sophia b1829 Erith)
	George Rumley	Apprentice (brother to James) (Father was a Labourer in an oil mill) b1834 Dartford
	James Rumley	Apprentice (brother to George) (Father was a Labourer in an oil mill), b1837 Dartford
	Matilda Wordly	Tobacco pipe trimmer (wife of Thomas), b1815 Maidstone
	Thomas Wordly	Tobacco pipe maker, lived next door to John Wilbrow, b1813 Maidstone
	Ann Wilbrow	Tobacco pipe trimmer (wife of John Wilbrow), b1816 Dartford
	John Wilbrow	Tobacco pipemaker, lived next door to Thomas Wordly, b1819 Dartford
1861	May Howe**	Tobacco pipe trimmer (wife of William), b1820 Ireland
	William Howe**	Tobacco pipemaker, b1820 Colchester
	Emma Hunt**	Pipe Trimmer (daughter of William), b1843 Dartford
	William Hunt**	Tobacco pipemaker, b1815 Bury St Edmunds
	George Miller	Tobacco pipemaker, b1831 Dartford (wife Mary b1831, Dartford)
	Laura Rooke**	Tobacco pipe trimmer (wife of William), b1831 Dartford
	William Rooke**	Tobacco pipemaker, b1826 Dartford
	James Rumley	Tobacco pipemaker, lived in Frog Island/Overy Street, b1838 Dartford
	Thomas Pascall	Retired Tobacco pipemaker, lived in East Hill, adjacent to Overy Street, b1806 Chatham (wife Ann b1806 Dover)
	Thomas Wordly	Tobacco pipemaker, lived at Coops Row adjacent to Overy Street, b1812 Maidstone (wife Matilda b1816 Maidstone)
	Charles Yonwin**	Tobacco pipemaker, employed 4 men and 2 boys, b1821 Gravesend (wife Jemima b1828 Gravesend)

** The Howes + Hunts + Rookes + Yonwin lived in adjacent houses.

1871	William Hunt	Pipemaker lived at No 5 Overy Street, b1815 Bury St Edmunds
	George Miller	Tobacco Pipemaker. Lived at Number 8 Overy Street, b1830 Dartford
	Mary Miller	Called a Tobacco Pipe Maker's wife, b1830 Dartford
	William Rooke	Tobacco Pipemaker, lived at Number 12 Overy Street, b1825 Dartford
	Laura Rooke	Called a Tobacco Pipe Maker's wife, b1825 Stone
	James Rumley	Tobacco Pipemaker, lived at Number 17* Overy Street, b1837 Dartford
	Mary Rumley	Called a Tobacco Pipemaker's wife, b1839 Dartford
	William Sandy	Tobacco pipemaker employed 8 persons, lived at East Hill, adjacent to Overy Street b1818 Bromley (wife Anna b1825 Dartford and sister in law Amelia Pascall b1823 Dartford)
	John Stubbs	Tobacco pipemaker, lived at Number 15*Overy Street, b1837 Dartford (wife Mary, b1839 Dartford)
	Thomas Wordley	Tobacco pipemaker, lived at Short Hill, adjacent to Overt Street, b1811 Maidstone (wife Matilda worked at the Mill, b1815)
1881	James Birchall	Tobacco Pipemaker, lodger at Number 17* Overy Street, b1853 Wolverhampton
	William Howe	Tobacco pipemaker, lived at 15 East Hill, adjacent to Overy Street, (Public Lodging House), b1819 Dartford
	Arthur Kennett	Tobacco Pipemaker, nephew of James Rumley, lived at Number 17* Overy Street, b1864 Dartford
	George Miller	Tobacco pipemaker, lived at Number 6 Overy Street, b1831 Dartford
	Mary Miller	Tobacco Pipe Trimmer (daughter of George), b1862 Dartford
	William Rooke	Tobacco pipemaker, lived at Number 12 Overy Street, b1827 Dartford
	Laura Rooke	Tobacco Pipe Trimmer (wife of William), b1832 Stone
	James Rumley	Tobacco Pipe Maker (employed 6 men and 2 women) Lived at No 17* Overy Street, b1837 Dartford (wife Mary, b1837 Hendon)
	George Rumley	Tobacco Pipemaker, (son of James), b1853 Dartford
1891	Charles Rumley	Tobacco pipemaker, (son of James), b1876 Dartford
	George Rumley	Tobacco pipemaker, (son of James, b1863) Dartford
	James Rumley	Tobacco pipemaker, lived at 17* Overy Street (wife Mary b1839 Hendon), b1837 Dartford
1901	*James Rumley*	*A 'gardener, not domestic' as a 'worker' (not an employer) lived at 18 Overy Street, b1837 Dartford (wife Mary, b1837 Hendon)*

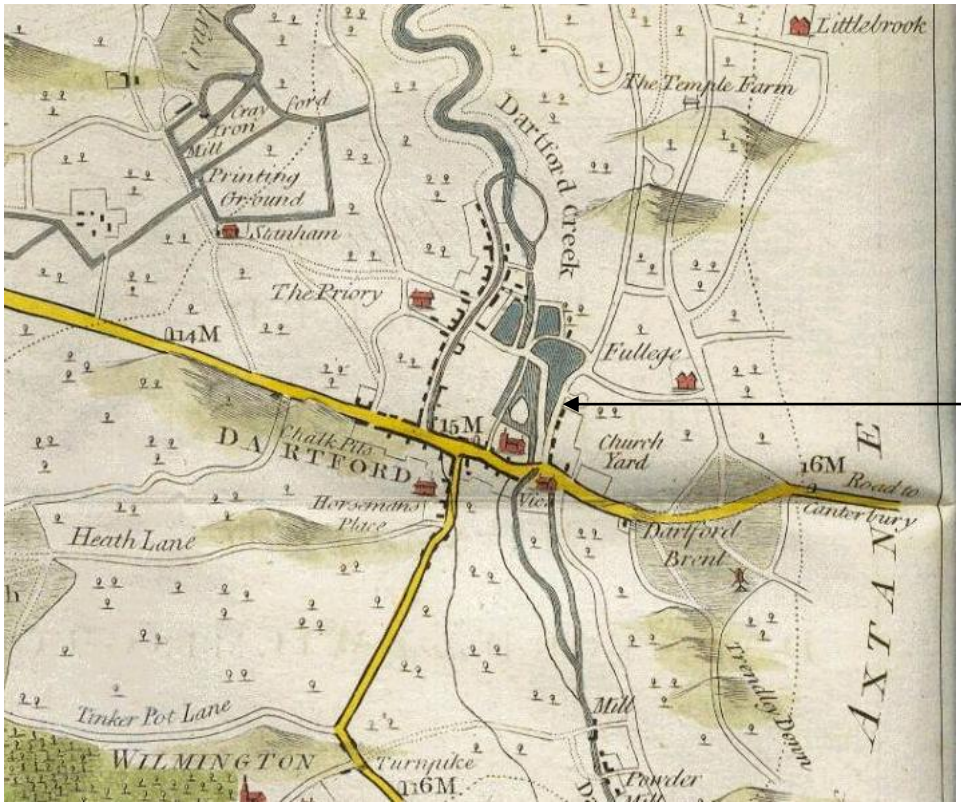
* Overy Street houses numbered 15 and 17 are preserved and known today as 'The Pipe House' – see accompanying maps and painting.

It seems unlikely that William Sandy himself made many pipes in East Hill or elsewhere. He had been a carpenter in Chislehurst in 1851 and was a victualler with premises on Dartford High Street in 1861. In 1871, Amelia Pascall, William Sandy's sister in law, is recorded as resident with him and his wife Anna in East Hill and as having a life interest in the property. In 1881 William Sandy described himself as a retired publican and lived with his wife in Highfield Road, Dartford.

Figure 13: **Maps and a Painting of "The Pipe House", Overy Street.**

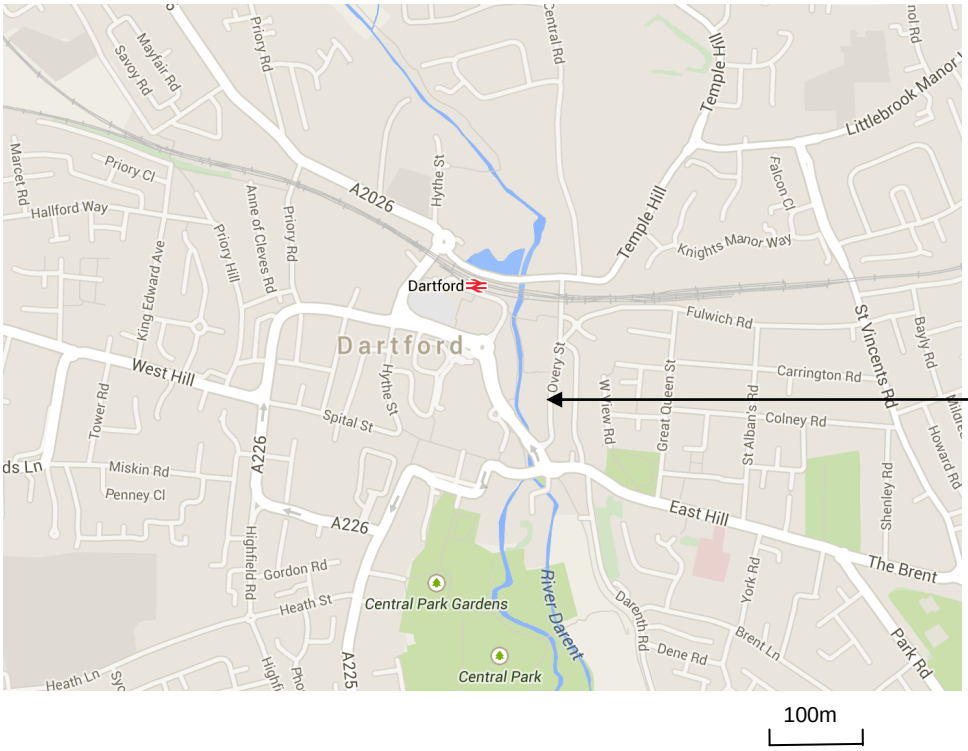
The Pipe House is located in Overy Street, Dartford Kent.

This Map Reveals the Position of Overy Street, East of Dartford, as Shown in 1800.



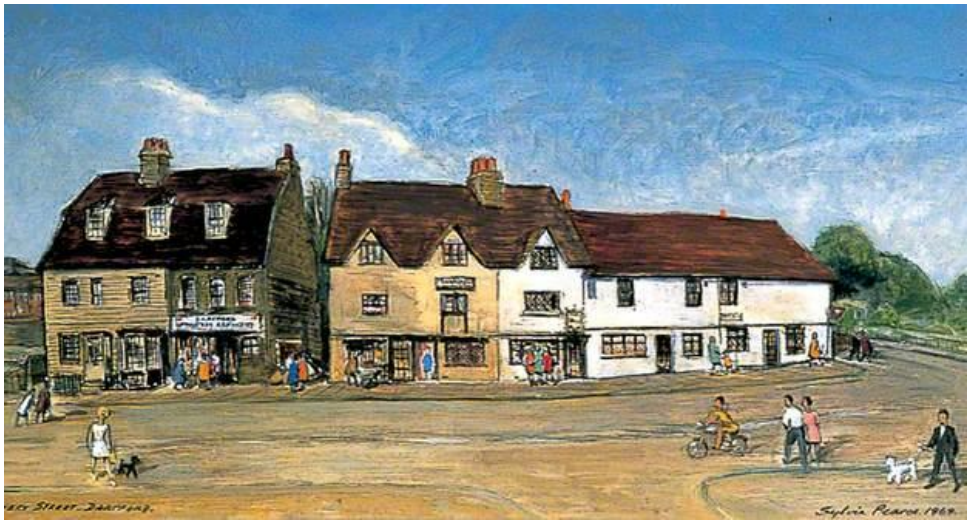
Extract from the map of the Hundred of Dartford and Wilmington. Engraved by William Barlow in Edward Hastead's *The History and Topographical Survey of Kent.* 1800.
Available from:
http://freepages.genealogy.rootsweb.ancestry.com/~genmaps/genfiles/COU_files/ENG/KEN/barlow-hastead_little-etc_1800.html
(Accessed 16 October 2014)

Current Map Showing Overy Street to the West of Modern Dartford, Kent



Extract from the current Google Map of Dartford. 2014.
Available from:
https://www.google.co.uk/maps/place/Dartford,+Kent/@51.4448818,0.2153526,16z/data=!4m2!3m1!1s0x47d8ad61b235b6d1:0x8f1792a69a52972f
(Accessed 16 October 2014)

'Overy Street, Dartford, Kent' by Sylvia Pearce
Original painting held in Dartford Library



The Houses to the left are 15 and 17 Overy Street, still known as 'The Pipe House'

Available from:
http://www.bbc.co.uk/arts/yourpaintings/paintings/overy-street-dartford-kent-76041.
(Accessed 16 October 2014)

Table 14: VARIATIONS FROM STANDARD ATKINSON AND OSWALD BOWL TYPES (page 1 of 2)

REFERRING ONLY TO THE AO BOWLS IN THE SUGGESTED TYPOLOGY FOR KENT (*Figure 6* and *Table 2* in Appendix 1)

Type	Total No. in each AO type:	No. of sites represented	No. Tall	% Tall	No. of sites	No. Short	% Short	No. of sites	No. steep lip	% steep lip	No. of sites	No. Slim	% slim	No. of sites	No. Large	% Large	No. of sites	No. Bulbous	% Bulbous	No. of sites	No. Small	% Small	No. of sites
2	5	2	2	40	1																		
4	24	8	2	8.3	2										1	4.2	1	1	4.2	1			
9	25	9	5	20	2													1	4.0	1			
10	154	26	6	3.9	5													8	5.2	1			
12	351	31	8	2.3	6	4	1.1	2							2	0.6	1	1	0.3	1			
13	140	29	10	7.1	6	11	7.9	3	4	2.9	3												
15	154	20				13	8.4	3	1	0.6	1	1	0.6	1				1	0.6	1	1	0.6	2
18	100	18	43	43.0	10	1	1.0	1										2	2.0	1			
20	70	14	2	2.9	2	3	4.3	2															
21	117	26	17	14.5	5				30	25.6	8	1	0.9	1				1	0.9	1			
22	71	8	2	2.8	1	4	5.6	2															
25	865	46	241	27.9	24	3	0.3	2	2	0.2	2				3	0.3	2						
26	42	15	2	4.8	2																		
27	294	24	17	5.8	8	3	1.0	3	1	0.3	1				1	0.3	1						
28	239	20	12	5.0	4	31	13.0	7	1	0.4	1										1	0.4	2
29	127	15	34	26.8	7	2	1.6	1	3	2.4	3				6	4.7	3						
30	311	24	23	7.4	6	2	0.6	2	38	12.2	3	6	1.9	3	8	2.6	5				1	0.3	1
33	233	24	12	5.2	5	24	10.3	5	1	0.4	1	67	28.8	7	2	0.9	1				5	2.1	2
Total	**3322**		**438**	**13.2**		**101**	**3.0**		**81**	**2.4**		**75**	**2.3**		**23**	**0.7**		**15**	**0.5**		**8**	**0.2**	

AO Types with no variants

Type	No. of bulbs	No. of sites represented
5	63	6
11	7	6
14	8	3
Total	**78**	

Total number of variant AO pipes: 741 21.8 %

Total number of AO pipes (3322 + 78): 3400

Table 14: VARIATIONS FROM STANDARD OSWALD BOWL TYPES (page 2 of 2)

REFERRING ONLY TO THE Os BOWLS IN THE SUGGESTED TYPOLOGY FOR KENT (see *Figure 6, page 223,* and *Table 2, page 222*)

Type	Total No. in each Os type:	No. of sites represented	No. Tall	% Tall	No. of sites	No. Short	% Short	No. of sites	No. steep lip	% steep lip	No. of sites	No. Slim	% slim	No. of sites	No. Large	% Large	No. of sites	No. Bulbous	% Bulbous	No. of sites	No. Small	% Small	No. of sites
9	89	20				9	10.1	3	7	7.9	2							3	3.4	1			
10	50	8				1	2.0	1															
11	14	10										6	42.9	6									
12	111	30				29	26.1	7							1	0.9	1						
14	10	2				1	10.0	1				3	30.0	1				1	10.0	1			
22	28	13	2	7.1	2	2	7.1					1	3.6	1									
29	9	2	8	88.9	1																		
Total	**311**		**10**	**3.2**		**42**	**13.5**		**7**	**2.3**		**10**	**3.2**		**1**	**0.3**		**4**	**1.3**		**0**	**0**	

Os Type with no variants

Type	No. of bulbs	No. of sites represented
6	12	6
30	6	2
Total	**18**	

Total number of variant Os pipes: **74** **22.5 %**

Total number of Os pipes (311 + 18): **329**

Cumulative totals:

Tall			Short			Steep lip			Slim			Large			Bulbous			Small
448			143			88			85			24			19			8

Total number of variants (AO plus Os) in the suggested typology **815** **21.9 %**

Total number of pipes (AO plus Os) in the suggested typology **3729**

n.b. this table excludes types found with fewer than five examples (21 AO pipes and 16 Os pipes)

Table 15: **Variations of AO and Os Pipe Bowls Found at Each Location (page 1 of 4)**

Pipes recorded from these sites:	TOTAL	Pipes with no type	Pipes with known type	Tall	%	Short	%	Steep Lip	%	Slim	%	Large	%	More Bulbous	%	Small	%	Total no. of variants	Variants as % of Total at Site
Beckenham, Rat & Parrot Public House, High Street.	1		1															0	0.0
Bexley, Hall Place.	8	5	3															0	0.0
Canterbury Cathedral South Close	48	1	47					1	*2.1*									1	2.1
Canterbury High School	6	1	5															0	0.0
Canterbury, Christ's Church College	10		10	2	*20.0*													2	20.0
Canterbury, Cobham Place	16	2	14	1	*6.3*	4	*25.0*											5	31.3
Canterbury, County Hotel cellar	2		2															0	0.0
Canterbury, Cow Lane Wincheap	2		2															0	0.0
Canterbury, Greyfriars	81	1	80	6	*7.4*	1	*1.2*											7	8.6
Canterbury, Hospital Lane	3		3															0	0.0
Canterbury, John Willson's finds, unsourced.	5	1	4									1	*20.0*					1	20.0
Canterbury, Longmarket	136		136	1	*0.7*			1	*0.7*	1	*0.7*			1	*0.7*			4	2.9
Canterbury, Lower Chantry Lane	1		1			1	*100.0*											1	100.0
Canterbury, Manwood Lodge, Hales Drive	1		1															0	0.0
Canterbury, Marlowe Theatre	21		21					3	*14.3*									3	14.3
Canterbury, North Lane	21		21			1	*4.8*											1	4.8
Canterbury, Northgate	301	23	278	15	*5.0*	17	*5.6*	5	*1.7*	31	*10.3*					1	*0.3*	69	22.9
Canterbury, St George's Clocktower	376	7	369	10	*2.7*	1	*0.3*	15	*4.0*	1	*0.3*	2	*0.5*					29	7.7
Canterbury, St Gregory' Priory	414	16	398	13	*3.1*	27	*6.5*	11	*2.7*	12	*2.9*	2	*0.5*					65	15.7
Canterbury, St John's Hospital	43	1	42	7	*16.3*	2	*4.7*					3	*7.0*					12	27.9
Canterbury, St Martin's churchyard	1		1	1	*100.0*													1	100.0
Canterbury, St Mary's School	1		1															0	0.0
Canterbury, Tannery	41		41	3	*7.3*			4	*9.8*									7	17.1
Canterbury, The Beaney Institute	64	1	63	42	*65.6*									3	*4.7*			45	70.3
Canterbury, Westgate Gardens	18		18	2	*11.1*			1	*5.6*					1	*5.6*			4	22.2

Table 15: **Variations of AO and Os Pipe Bowls Found at Each Location (page 2 of 4)**

Pipes recorded from these sites:	TOTAL	Pipes with no type	Pipes with known type	Tall	%	Short	%	Steep Lip	%	Slim	%	Large	%	More Bulbous	%	Small	%	Total no. of variants	Variants as % of Total at Site
Canterbury, Whitefriars	23		23	4	*17.4*			2	*8.7*									6	26.1
Charlton Villa	34		34	4	*11.8*					1	*2.9*							5	14.7
Dartford , Stonegate	15	2	13	1	*6.7*													1	6.7
Dartford, Hawley Manor	1		1															0	0.0
Deal, Black Horse Public House	37	3	34			1	*2.7*											1	2.7
Deal, North Barracks	5		5	4	*80.0*													4	80.0
Deptford, 142 Deptford High Street	3	1	2															0	0.0
Deptford, Borthwick Street.	1		1					1	*100.0*									1	100.0
Deptford, Convoys Wharf	5	3	2															0	0.0
Deptford, Greenwich Reach	102	5	97	19	*18.6*			1	*1.0*	2	*2.0*							22	21.6
Deptford, Magistrates' Court	1		1															0	0.0
Deptford, Payne's & Borthwick Wharf	514	47	467	36	*7.0*	17	*3.3*			1	*0.2*	4	*0.8*	13	*2.5*	1	*0.2*	72	14.0
Deptford, Sayes Court.	3		3			1	*33.3*			1	*33.3*							2	66.7
Deptford, Seagar Distillery	47	10	37	1	*2.1*	1	*2.1*					4	*8.5*			1	*2.1*	7	14.9
Dover Castle	1		1	1	*100.0*													1	100.0
Dover Castle	23		23	1	*4.3*													1	4.3
Dover Cattle Street	1		1															0	0.0
Dover Sewers	343	1	342	101	*29.4*	2	*0.6*	1	*0.3*	1	*0.3*							105	30.6
Erith, Stonewood Road	1		1									1	*100.0*					1	100.0
Faversham	8		8	6	*75.0*													6	75
Gillingham	5	3	2															0	*0.0*
Gravesend Hospital	10	8	2															0	*0.0*
Greenwich General	1	1	0															0	*0.0*
Greenwich High Road	17		17	9	*52.9*													9	*52.9*
Greenwich Magistrates' Court	5	2	3			1	*20.0*	1	*20.0*									2	*40.0*

Table 15: **Variations of AO and Os Pipe Bowls Found at Each Location (page 3 of 4)**

Pipes recorded from these sites:	TOTAL	Pipes with no type	Pipes with known type	Tall	%	Short	%	Steep Lip	%	Slim	%	Large	%	More Bulbous	%	Small	%	Total no. of variants	Variants as % of Total at Site
Greenwich, 66 Foyle Road	14	1	13															0	*0.0*
Greenwich, Anchor Iron Wharf, Lassell Street	23	3	20	1	*4.3*			1	*4.3*									2	*8.7*
Greenwich, Armoury, Royal Naval College	6		6	2	*33.3*	1	*16.7*											3	*50.0*
Greenwich, Bellot Street	1		1															0	*0.0*
Greenwich, Dreadnaught Seamans' Hospital, King's Walk	9	2	7	2	*22.2*													2	*22.2*
Greenwich, National Maritime Museum	4		4	2	*50.0*	1	*25.0*											3	*75.0*
Greenwich, Pepys Building, Royal Naval College	16	2	14	5	*31.3*	1	*6.3*			1	*6.3*							7	*43.8*
Greenwich, Queen Anne's Yard. Royal Naval College	53	6	47	8	*15.1*													8	*15.1*
Greenwich, Queen Mary Block, Royal Naval College	9	3	6															0	*0.0*
Greenwich, Trinity Hospital, Old Woolwich Road	5	2	3															0	*0.0*
High Halden (Ashford)	2	1	1															0	*0.0*
Lewisham, Conington Road	3		3			1	*33.3*	1	*33.3*									2	*66.7*
Lyminge	4	1	3					1	*25.0*									1	*25.0*
Maidstone, 37 High Street	33		33			7	*21.2*	4	*12.1*									11	*33.3*
Maidstone, Archbishop's Palace	14	1	13															0	*0.0*
Maidstone, Fremlin Walk	93	45	48	2	*2.2*	13	*14.0*	1	*1.1*									16	*17.2*
Maidstone, The Mount Roman Villa, Old Cavalry Barracks	6	2	4															0	*0.0*
New Romney	12	6	6	1	*8.3*													1	*8.3*
Orpington Hospital	1	1	0															0	*0.0*
Plumstead Marshes	1		1															0	*0.0*
Rainham	10	5	5									1	*10.0*					1	*10.0*
Rochester, 178-184 High Street	37	3	34															0	*0.0*
Rochester, George Vaults	25	2	23	14	*56.0*													14	*56.0*
Sandwich, East Walk	3	2	1															0	*0.0*

Table 15: **Variations of AO and Os Pipe Bowls Found at Each Location (page 4 of 4)**

Pipes recorded from these sites:	**TOTAL**	**Pipes with no type**	**Pipes with known type**	**Tall**	**%**	**Short**	**%**	**Steep Lip**	**%**	**Slim**	**%**	**Large**	**%**	**More Bulbous**	**%**	**Small**	**%**	**Total no. of variants**	**Variants as % of Total at Site**
Sandwich, Field Walking East (towards Newcut Bridge)	15	9	6															0	*0.0*
Sandwich, Potter St.	80	2	78	19	*23.8*	7	*8.8*											26	*32.5*
Sandwich, Quayside	1		1															0	*0.0*
Sandwich West walk	2	2	0															0	*0.0*
Sittingbourne	13	3	10							1	*7.7*							1	*7.7*
Sittingbourne, East Street	1		1															0	*0.0*
Sittingbourne, High Street	55	2	53	8	*14.5*			31	*56.4*									39	*70.9*
Tonbridge, Bank Street	6	2	4															0	*0.0*
Tonbridge, 'Lyons', East Street	10	2	8	2	*20.0*													2	*20.0*
Tunbridge Wells, Chingley Forge (Bewl Water)	52	19	33															0	*0.0*
Woolwich	2	1	1	1	*50.0*													1	*50.0*
Woolwich Beach	2	1	1	1	*50.0*													1	*50.0*
Woolwich Dockyard	276	2	274	37	*13.4*	29	*10.5*	1	*0.4*	1	*0.4*					4	*1.4*	72	*26.1*
Woolwich unsourced finds (in drawers)	299	41	258	48	*16.1*	6	*2.0*			31	*10.4*	6	*2.0*	1	*0.3*	1	*0.3*	93	*31.1*
Woolwich, Catherine Wheel Inn, Shooters Hill	32	8	24	5	*15.6*			1	*3.1*									6	*18.8*
Woolwich, Royal Arsenal	4	1	3															0	*0.0*
TOTALS	**4057**	**328**	**3729**	**448**	*11.0*	**143**	*3.5*	**88**	*2.1*	**85**	*2.1*	**24**	*0.6*	**19**	*0.5*	**8**	*0.2*	**815**	***20.1***

Table 16: **BOWL DECORATION FOUND IN KENT (page 1 of 4)**

Dominant Decorative Theme	Number of bowls	Percentage of Total Decorated	Main Bowl types (AO unless stated) and generalised locations
Anchor & Ship	1	0.3	Sittingbourne 30
Anchor, Chain & Sailing ship	1	0.3	Woolwich 28
Angular Face	1	0.3	Canterbury 12
Archer	1	0.3	Woolwich 33
Chequerboard	1	0.3	Woolwich 29
Circle of 5 dots	1	0.3	Canterbury 12
Crown & Anchor	1	0.3	Greenwich 30
Crowned Rose + Bird	1	0.3	Canterbury 25
Deer	1	0.3	Canterbury 27
Dot pattern at bowl base	1	0.3	Deptford 28
Dragon	1	0.3	Greenwich 27
Feathers and Balls	1	0.3	Woolwich 39
Fish scales	1	0.3	Woolwich 30
Flowers	1	0.3	Woolwich 33
Hand at base of bowl	1	0.3	Sittingbourne 30
Horns on base of bowl	1	0.3	Chingley Os 12
Human face	1	0.3	Greenwich Os 29
Ich Dien	1	0.3	Greenwich Os 12
Log	1	0.3	Greenwich 29
Milling decoration at base of bowl	1	0.3	Deal 10
Netting	1	0.3	Woolwich 30
Pattern of rows of 16 dots	1	0.3	Canterbury 30

Table 16: **BOWL DECORATION FOUND IN KENT (page 2 of 4)**

Dominant Decorative Theme	Number of bowls	Percentage of Total Decorated	Main Bowl types (AO unless stated) and generalised locations
Patterns of 3 dots	1	0.3	Canterbury 30
Prince of Wales Feather + 'Honi soit...'	1	0.3	Charlton 26
RAOB	1	0.3	Woolwich 33
Ribbons	1	0.3	Sittingbourne 30
Rose	1	0.3	Canterbury Os 12
Sailing ship & Paddle ship	1	0.3	Canterbury 26
Scallops	1	0.3	Canterbury 33
Shield	1	0.3	Woolwich 33
Snake	1	0.3	Woolwich 33
Spread Eagle	1	0.3	Maidstone 29
Thistles (only)	1	0.3	Greenwich 18
Anchor & Rope	2	0.6	Canterbury 30
Cornucopia	2	0.6	Canterbury 28, 33
Cricketers	2	0.6	Dartford, 30, Woolwich 30
Dolphin	2	0.6	Canterbury 12
Empty cartouches	2	0.6	Woolwich 30
Leaves and Acorns	2	0.6	Charlton 29
Prince of Wales Feather + Ich.. + Honi..	2	0.6	Greenwich 28
Rope with Heads of Corn	2	0.6	Woolwich 30
Shield & Crown	2	0.6	Canterbury 27, 33
Thorns and Branch	2	0.6	Sittingbourne 30
Angel Wings or Harp + Shamrock	3	0.8	Canterbury 30, Woolwich 33
Cycle	3	0.8	Canterbury 30
Horseshoes	3	0.8	Woolwich 33

Table 16: **BOWL DECORATION FOUND IN KENT (page 3 of 4)**

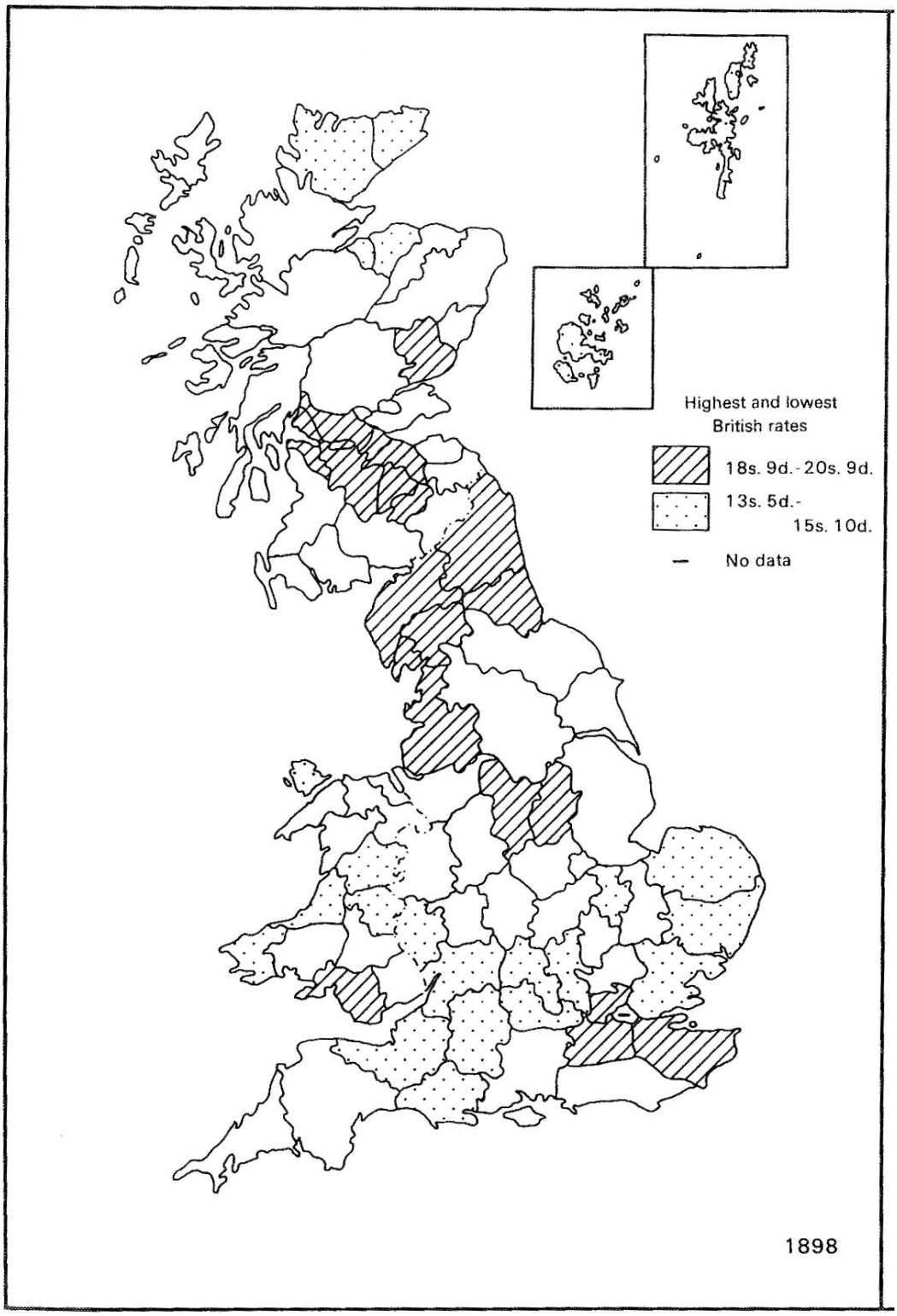
Dominant Decorative Theme	Number of bowls	Percentage of Total Decorated	Main Bowl types (AO unless stated) and generalised locations
Lion & Unicorn	3	0.8	Canterbury 25, Os 12
Bald man (? Baden Powell)	4	1.1	Woolwich 29
Phoenix (bird)	4	1.1	Canterbury 33, Os 12, Deptford 25
RAOB + horns + bull's head	4	1.1	Woolwich 29 30
Thorns	4	1.1	Woolwich 30, 33
Unspecified	4	1.1	Canterbury 27, Rochester Os 22
Pattern of rows of 17 dots	5	1.4	Woolwich 30
Prince of Wales Feathers & Ich Dien	5	1.4	Greenwich 22, 25, OS 12, Woolwich 30
Claw	6	1.7	Canterbury 30
Queen Victoria	6	1.7	Woolwich 33
Cartouches filled with leaves	7	2.0	Canterbury 30
RAOB + horns	9	2.5	Canterbury 30, Woolwich 29, 30 33
Royal Coat of Arms	9	2.5	Canterbury 25, Charlton Os 22, Deptford 12, 22, Woolwich 26, Os 12
Prince of Wales Feathers & Dragon	10	2.8	Deptford 27
Basket	11	3.1	Canterbury 30, Woolwich 30, 33
Inniskilling	11	3.1	Canterbury 30, Greenwich 33, Woolwich 33
Grapes	13	3.7	Canterbury 30, Deptford 28, Greenwich 27, Sittingbourne 30, Woolwich 29, 30,
Prince of Wales Feathers	15	4.2	Canterbury 25, 26, Dover 18, Rochester 18
Maker's name	16	4.5	Canterbury 27, Deptford 25, 27, 33, Sandwich 22, Woolwich 18, 29, 30 Os 12
Adam & Eve	17	4.8	Sandwich 25
Rose & Thistle	21	5.9	Deptford 27,18, 29, 33, Greenwich 27, 28 Woolwich 28, 29, 33
Leaves & Branches	26	7.3	Canterbury 22, 25, 30, Chingley Forge 15, Maidstone 28, Woolwich 27, 28
Masonic	36	10.2	Canterbury 28,30,Os12, Greenwich 33, Rochester 27,28, Sandwich 28, Woolwich 26,27,29,30,33
Barrel	44	12.4	Canterbury 30, Faversham 30

***Table 16*: BOWL DECORATION FOUND IN KENT (SUMMARY) (page 4 of 4)**

TOTAL OF DECORATED BOWLS	352
TOTAL WITH RIBBED DECORATION	189
TOTAL PLAIN OR ONLY DECORATED SEAMS	3188
TOTAL FOR ALL AO AND Os PIPES WITH FIVE OR MORE EXAMPLES SEEN	**3729**
BOWLS THAT CANNOT BE TYPED	328
BOWLS EXCLUDED AS FEWER THAN FIVE EXAMPLES FOUND	37
OTHER ITEMS (KILN FURNITURE, UNSOURCED PIPES, HAIR CURLERS, ETC.)	33
TOTAL FOR ALL ITEMS RECORDED	**4127**

Figure 20: **Captain William Driscoll Gosset's map of Woolwich (surveyed in 1853) with Michael Martin's 'pipe manufactory' indicated**

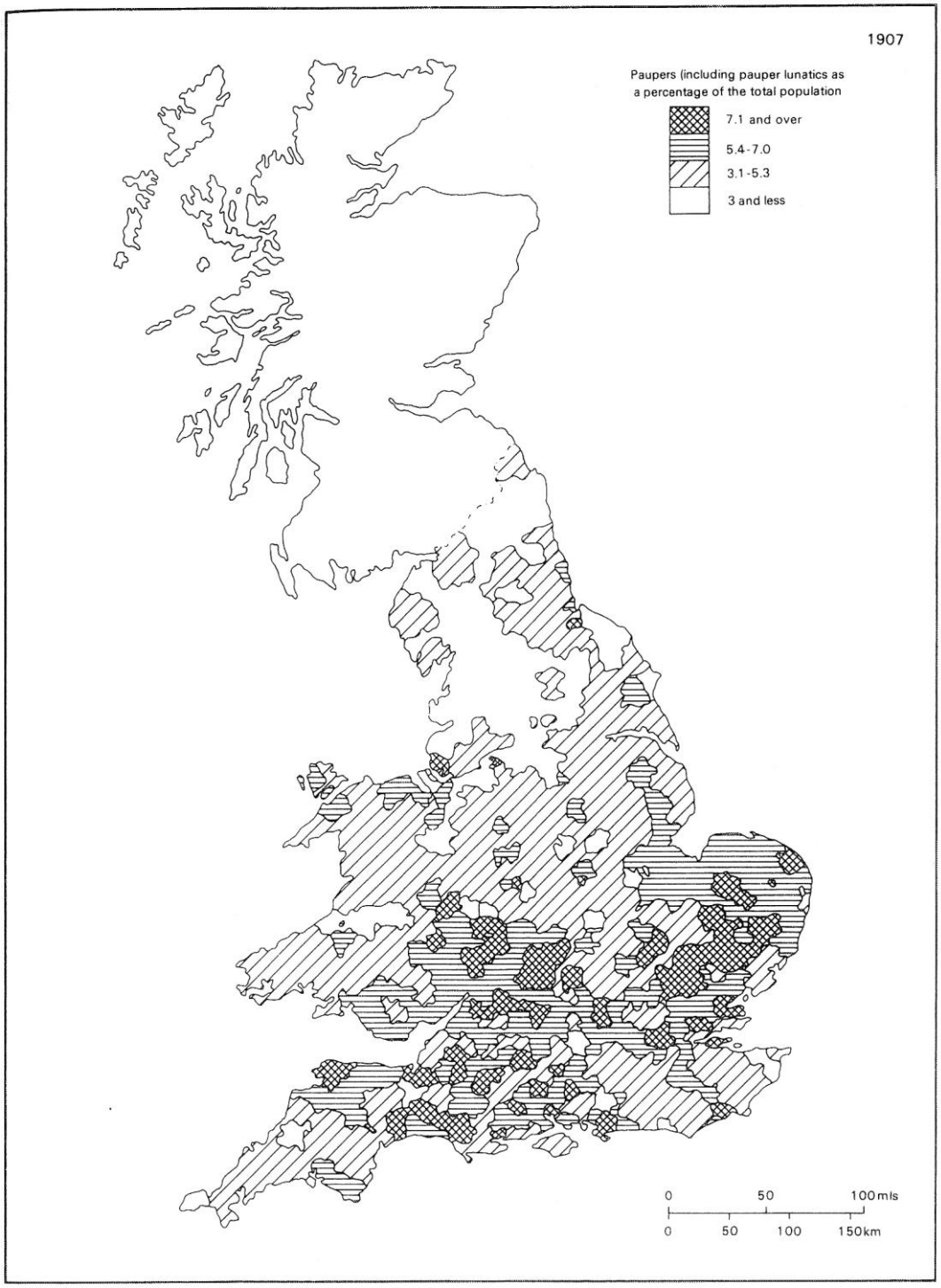
Figure 22



6.6–7 Agricultural labourers' wages, 1898

(Langton and Morris 1986, 67)

Figure 23

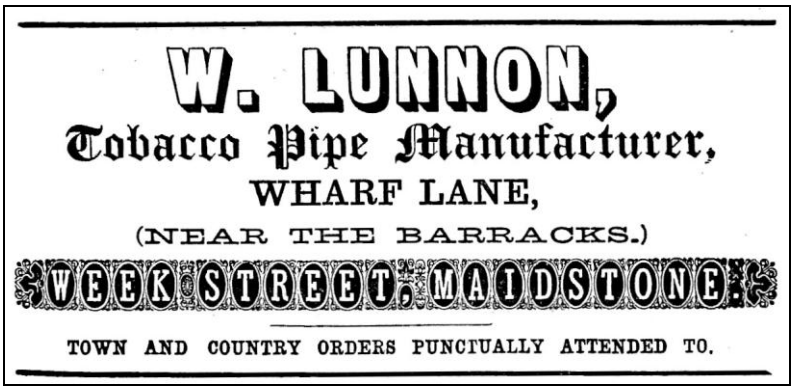


21.5 Pauperism in England and Wales by registration district, 1907

(Langton and Morris 1986, 163)

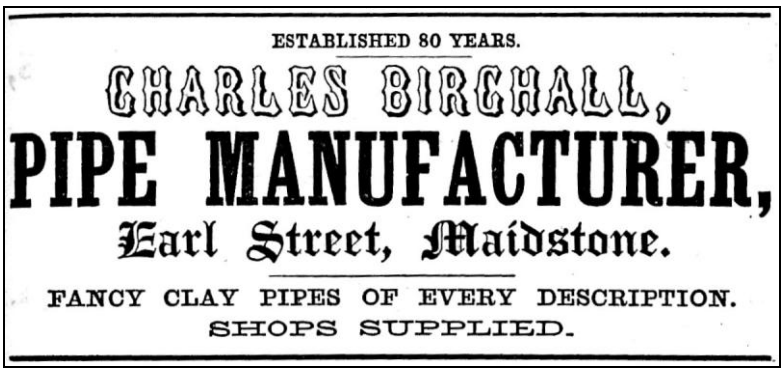
Figure 24: **Pipe Maker Advertisements**

Advertisement 1



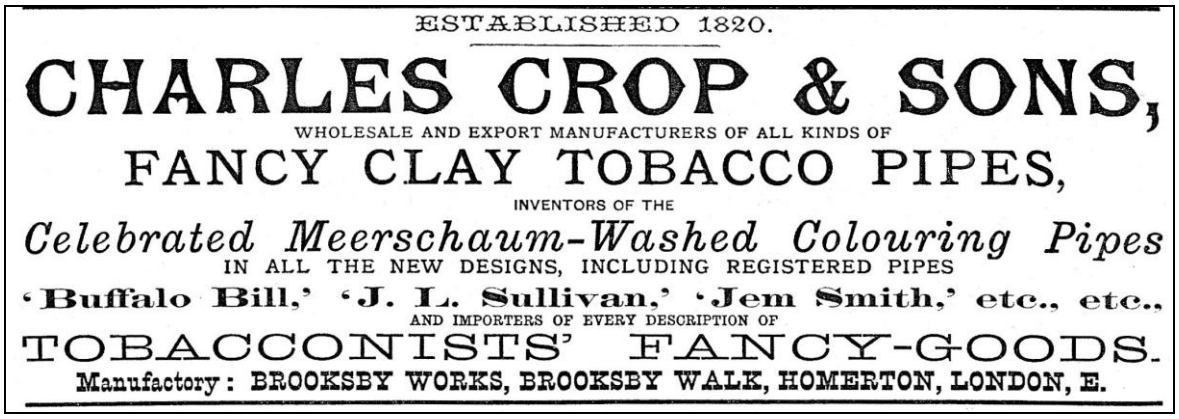
Quarter-page advertisement for the Maidstone pipe manufacturer of W. Lunnon which appeared on page 647 of Melville & Co's *Directory and Gazetteer of Kent* in 1858.

Advertisement 2



Quarter-page advertisement for the Maidstone pipe manufacturer of Charles Birchall which appeared on page 657 of Melville & Co's *Directory and Gazetteer of Kent* in 1858.

Advertisement 3



Quarter-page advertisement for the London pipe manufacturer of Charles Crop & Sons which appeared on page xxxiv of the trade journal '*Tobacco*' on 1 July 1889 (and identically in other monthly publications of the journal).

Advertisement 4

Full-page advertisement for the Manchester pipe manufacturer of Samuel McLardy which appeared on page xxiv of the trade journal '*Tobacco*' on 1 July 1889 (and identically in other monthly publications of the journal).

Table 19: **Specimen Extract of a Table Showing the Key Features of Some Larger Pipemaking Businesses (page 1 of 2)**

Company name (short form)	Date formed	Any previous company	Main location	City size 1851	Navigable river / sea port?	Key founder(s)	Others active in family	Local smaller firms for workers	Evidence of size	Evidence of aggressive advertising	Registrations, Patents and Trade Marks
Pollocks	1879	No, but Edward had worked for McLardy and in Leith.	Manchester	303,382	Yes via Liverpool plus the MSC after 1894. Other navigations had become unusable.	Edward Pollock	John; Arthur; Gordon.	Yes	New premises required 1896 & extended 1899. Up to three kilns at one time.	Yes. Personalised pipes, trade catalogues - for wholesalers, their customers and for hawkers. Promotional aids for tobacconists. Adverts in men's magazines. Salesmen on commission. Owners attended trade fairs and were salesmen themselves.	4 registered designs

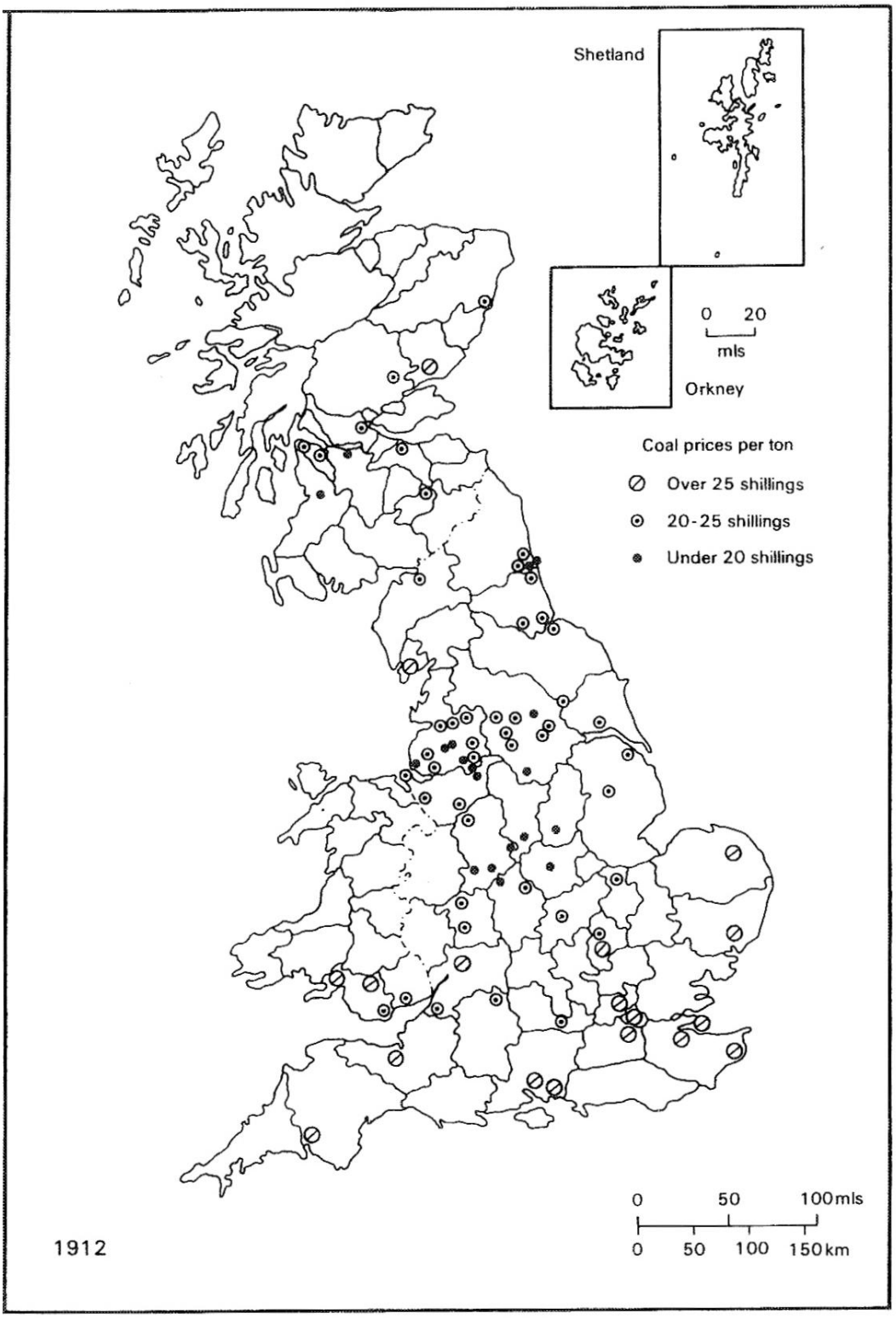
Similar studies have been made of these relatively large clay tobacco pipe manufacturers:

Blake (London); Christie (Glasgow); Church (London); Crop (London); Davidson (Glasgow); George (Bristol); Hawley (Bristol); Lincoln (Norwich); McDougal (Glasgow); McLardy (Manchester); Ring (Bristol); Southorn (Broseley); White, Joseph (Bristol); and White, William (Glasgow).

Table 19: **Specimen Extract of a Table Showing the Key Features of Some Larger Pipemaking Businesses (page 2 of 2)**

Company name (short form)	Diversified	Adapting to market changes	Powered machinery	Buying up competitors equipment	Date of closure	Dominant structure of business	Collaboration with other pipe makers	Exports	Wide variety of pipes	References. (in addition to Census Returns and Hammond 1988)
Pollocks	Very wide range including: toy soldiers, bubble pipes, whistles, fairground targets, honing stones, electrical insulators, tailor's chalk, etc. Secondary business: Pollock Brothers concentrated on mouthpieces, labels, etc. largely sold to the trade.	Clay brought in powder form from 1974	1906 pug mill steam engine installed. 1969 electric kiln installed	Took over Joseph Holland in 1942.	Sold 1990	Grew rapidly in the face of falling demand; always seen as a large concern (brief evolutionary phase). Extended use of division of labour. Used at least seven mould makers.	Yes - clay on loan at need to Joseph Holland and Samuel McLardy in Manchester. Gordon Pollock visited other UK pipemakers beyond Manchester seeking fresh ideas.	North America, Australia and Europe	Yes	BAR 352 2003

Figure 25



Coal prices in 1912

(Langton and Morris 1986, 75)

APPENDIX 2
CONTAINING MATERIAL WITH WIDE RELEVANCE

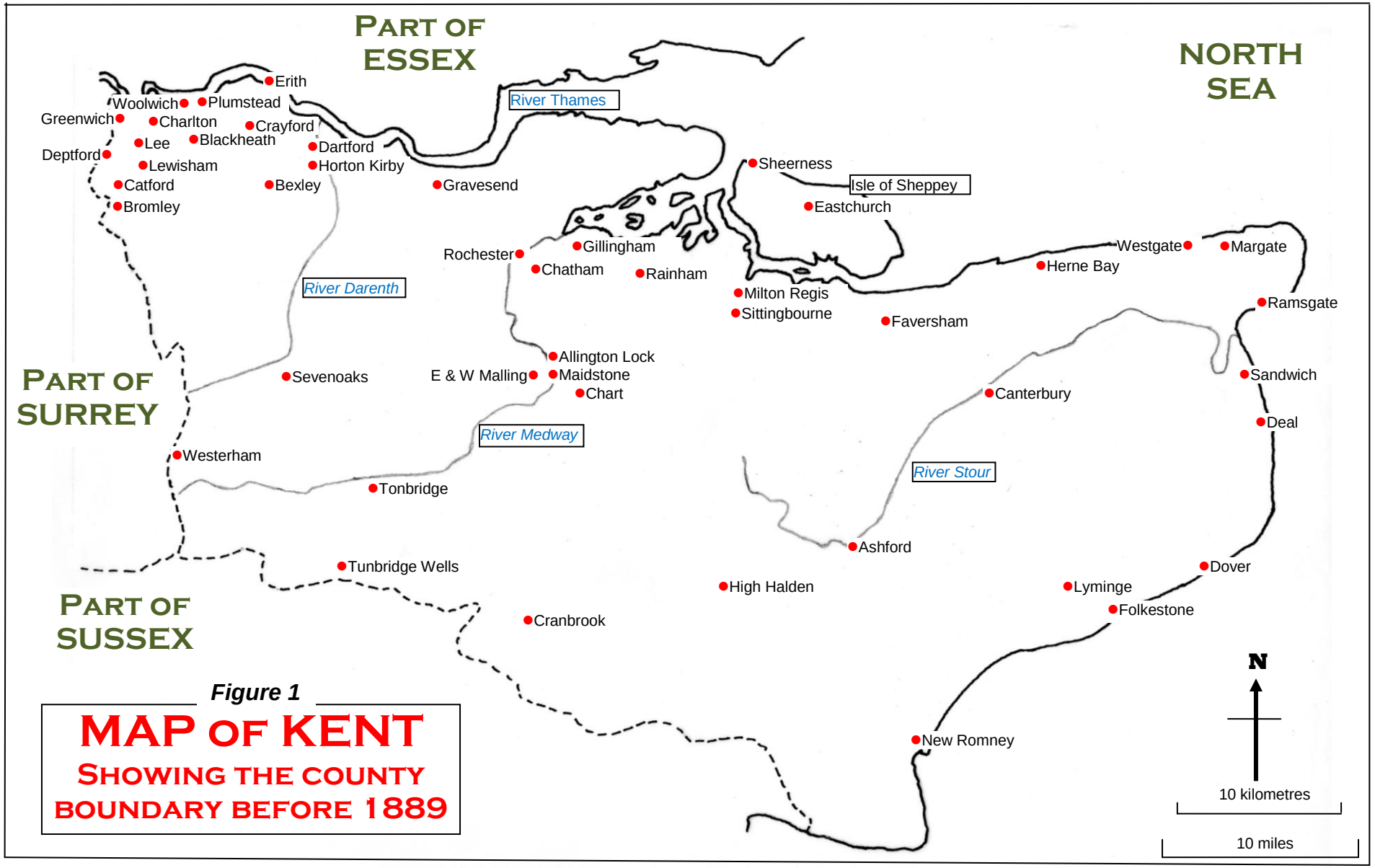
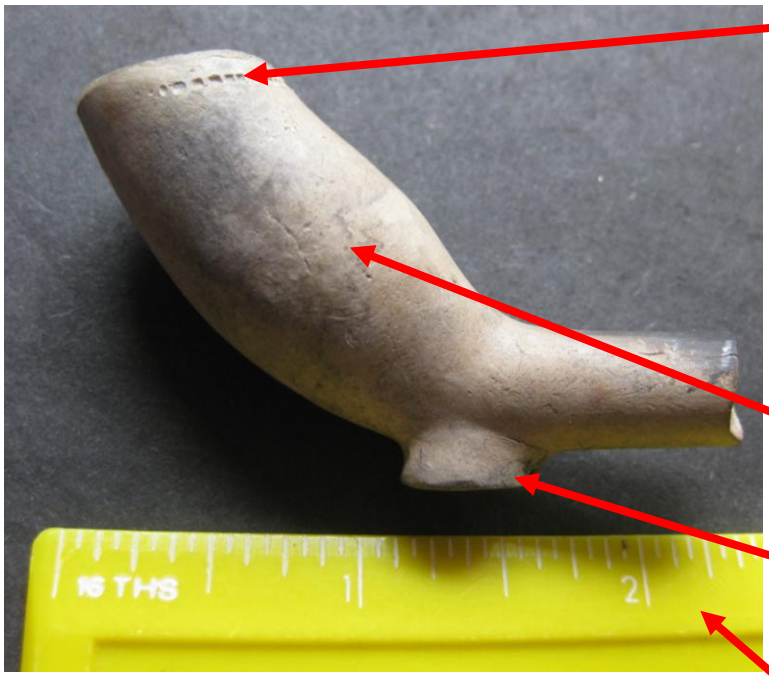


Figure 1

MAP OF KENT

SHOWING THE COUNTY BOUNDARY BEFORE 1889

Figure 2: **Photographs Identifying Some Parts of a Clay Tobacco Pipe and of a Pipe Mould, with Several Elements of Pipe Decoration.**



Milling or rouletting applied by hand with a spoked wheel. Here the decorative milling ceases towards the front of the pipe. While on some pipes the rouletting completely circles the top of the bowl, many pipes show rouletting around a quarter, half or three quarters of the circumference.

The bowl of the pipe.

A heel at the base of the bowl.

Measurements are shown in imperial units throughout this thesis as these were the units of measurement in place during the period of pipe manufacture.

The lip or rim of this pipe has been bottered – a small button-like object has been inserted into the bowl and rotated to produce a finished edge to the rim.

A spur at the base of this pipe.

The base of this decorated bowl is rounded and has neither heel nor spur.

The London maker, D. Hall, has his name shown inside a cartouche.

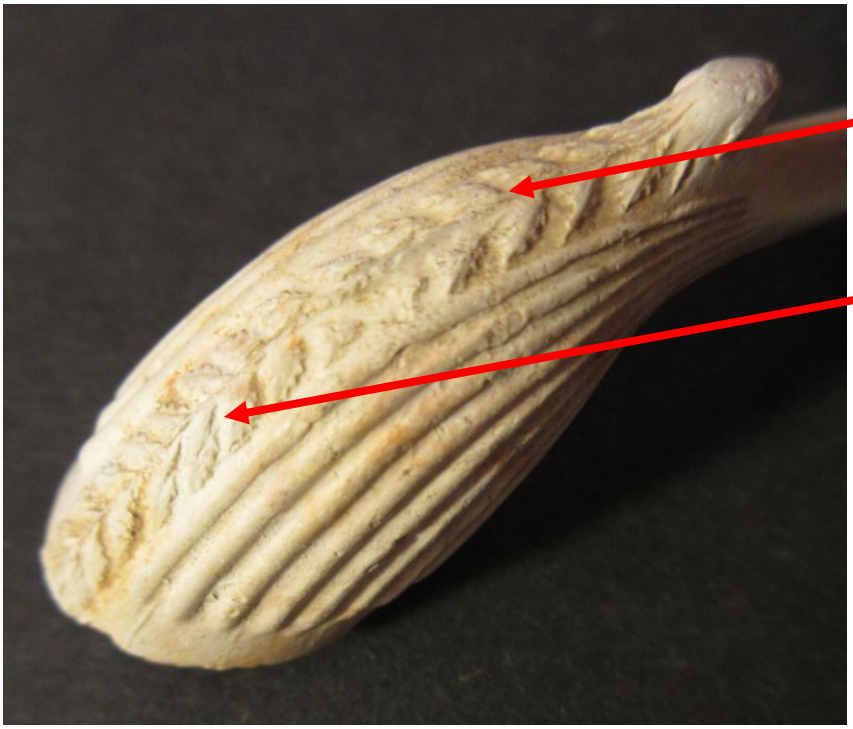
This pipe has a moulded nipple mouthpiece as opposed to one simply cut across the stem or shank of the pipe. Sometimes the mouthpiece is referred to as a nib or a tip.

These fives pipes show something of the variety of ribbing or fluting that can decorate a bowl. It can extend to go along the stem. Some, as with the pipe on the left, incorporate other designs, in this case a cord with tassels. The makers have shown their initials on the spurs; if the pipe is held in the smoker's mouth, the left side initial is for the Christian name and the right side for the surname.

The design of this 'Good Morning' pipe was registered; it carries the Registration Number of 6389.

Note the 'Six Inch' ruler. This is a 'cadger' pipe with an enormous bowl designed to take advantage of any offer to fill a pipe at someone else's expense. The moulded decoration is of football players supported by a ball and boot. This too was a Registered Design (numbered 241693).

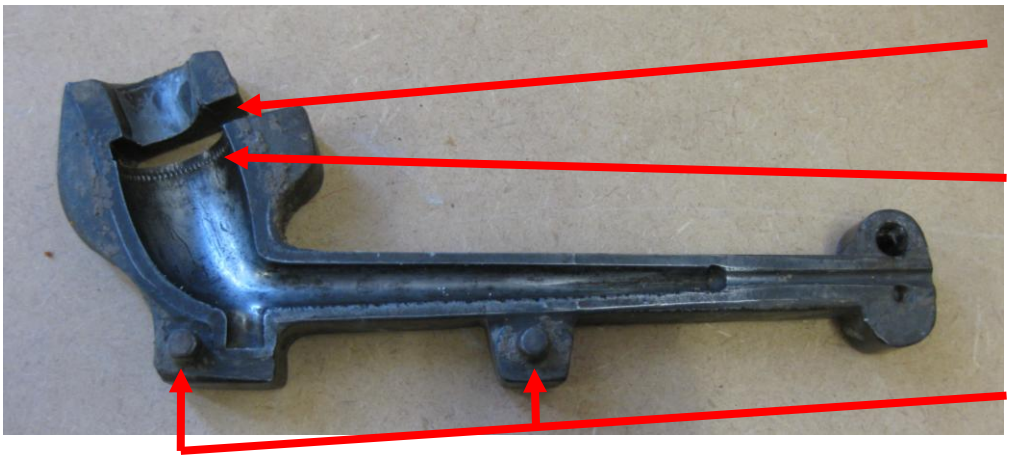
The pipes used in the photographs above are stored in the National Clay Tobacco Pipe Archive at Liverpool University. They were not all found in Kent and have not been studied as part of this research. They have been selected as acceptable examples of the various features highlighted in the photographs and accompanying notes and are referred to in the text of this thesis.



A narrow and slightly proud seam.

The raised leaf pattern on each side of the seam.

This ribbed pipe from my own collection shows a slightly proud seam caused when the two parts of the pipe mould are brought together. The seam is concealed within a raised leaf pattern and so needs no trimming.



Knifing slot

Moulded milling decoration

Locating lugs

One half of an iron pipe mould from the collection of Rex Key. It shows the knife slot where a blade could trim the bowl leaving a neat edge. Also visible is moulded milling decoration (cast in the mould and not imposed directly by a hand-held spurred wheel after moulding). The locating lugs which match holes on the other half of the mould are clear to see.

Table 20: A LIST OF THE PIPEWORKERS OF KENT

Explanatory Notes.

The list, referred to in this thesis, brings together my researches and those of others to create a record of pipeworkers known to have worked in Kent. It shows the more secure sources of information for all entries. In some cases it has been impossible to verify the work of others; some names shown by fellow researchers have been confirmed by my own research; very occasionally I have concluded that there is no basis for information from another researcher and where this occurs I have used my own research in preference. The last full survey of Kent pipeworkers (Oswald 1975, 174-176) listed 143 people; my list presents 641. Oswald's list, partly the work of Ernest Tilley, is mainly but not exclusively, of makers rather than trimmers or journeymen.

The term pipeworker covers those who made pipes, who trimmed pipes, who made moulds, who were salesmen and who were assistants. A pipemaker may have started working life as an assistant within the family, served an apprenticeship, become a journeyman and ended as an employer or master. This list records each worker once only. Many sources use the description 'pipe maker' or 'tobacco pipe maker' or 'clay pipe maker' as catch-all terms and do not distinguish more precisely the specific role of the worker. Sometimes the correct role can be inferred, but not always. Another area of potential uncertainty concerns the terms 'manufacturer' and 'factory' which today might be understood as indicating a larger scale of production than was intended at the time the terms were used.

Women are underrepresented in this list. A few women were pipe makers in Kent, employing men and taking apprentices. Others are simply described as the wife of a pipe maker – a similar description was used in other trades too. There is no guarantee that these wives were pipe workers but it seems highly likely that most family members at some time were active in pipe making where the bread-winner was a pipe maker.

Some pipe workers moved from place to place – perhaps as a journeyman seeking work, or following a change in family circumstances, or when looking to establish a new business. This list records the likely dominant location(s) within Kent for each worker. Some areas are difficult to separate geographically – this is especially the case for northwest Kent on the London fringe.

The dates shown are not always reliable – this is particularly true for dates obtained from census returns. Where possible, the use of census material has established the approximate year when a pipeworker was born and this is shown as the 'earliest' date on the table. Dates of death are not known for most workers and so the last datable record is shown. This gives an approximate period during which the workers may have worked in the pipe-making trade. This list is of people who worked in the industry at some time; inevitably, some will have changed occupations during their lifetimes.

Where pipemakers share common Christian and surnames I have attempted to remove duplicates so that each "John Smith" shown here should be different from any other with an identical name. Where similar lists exist, frequently the compilers have shown numbers after names (as in John Smith I, John Smith II). I think this could suggest familial relationships which may exist for some but not for all the John Smiths and so I have concluded this sequencing is a refinement best avoided.

Source Abbreviations used in 'The Pipeworkers of Kent' List

Abbreviation	Explanation
Atkinson	David Atkinson. 1975. "Clay Tobacco Pipes", contribution to T W Courtney's report 'Excavations at the Royal Dockyard, Woolwich 1972-1973', *Post-Medieval Archaeology* 1975, 9, 42-102.
Bowsher	Julian Bowsher. 2007. "Greenwich Tobacco Pipes" *SCPR Newsletter* 72, 2007, 35-46.
C (Italic font) followed by the year (as in *C1901*)	UK Census information, usually accessed via Ancestry.co.uk
Cannon	Paul Cannon. 2002. "Clay Pipe Research on the Internet" *SCPR Newsletter* 2002, 59, 16-24.
Cessford	Craig Cessford. "Two 17th Century Kentish Pipemakers." *SCPR Newsletter* 2002, 59, 11.
Cowper	Joseph Meadows Cowper 1903. *"Roll of the Freemen of the City of Canterbury from 1392 to 1800"*. Canterbury: Cross & Jackman.
Cufley	David Cufley, 1994, Unpublished list of Medway pipemakers set against brickmakers of Kent, Surrey and Sussex. List stored at Medway Archives Office (MAO ref: VF MED 688.4).
Directories and similar publications with year (the abbreviations used are given in brackets in the next column)	Bagshaw (Bg); Bradshaw (Br); Finch (F); Holden (H);Kelly (K); Melville (M); Pigot (P); Pike's Blue Book (Pike); Post Office (PO); Robinson (R); Universal British Directory of Trade, Commerce & Manufacture (UBD). Other directories named in full.
FofJC	Friend of John Cotter whose notes were copied to David Higgins in March 1994.
Frost	From the researches of Mark Frost, Assistant Curator of Dover Museum. Personal Communication with David Higgins (22.11.2000).
Godfrey	Ann Godfrey. 2007. "Henry Baker – Four Generations of Tobacco Pipe Makers 1815 – 1891" *SCPR Newsletter* 72, 2007, 52-55.
Hammond1	Peter Hammond. 2005. "The Stubbs Family of Tobacco Pipe Makers, London." *SCPR Newsletter* 2005, 68, 47-56.
Hammond2	Peter Hammond. 2004. ""Tobacco Pipe Makers in the Prerogative Court of Canterbury Wills Index." *SCPR Newsletter* 66, 2004, 15-23.
Hammond3	Peter Hammond. 2004. "Tobacco Pipe Makers extracted from the Inland Revenue Apprenticeship Books 1763 - 1810" *SCPR Newsletter* 65, 2004, 22-30.
KHLC	Anonymous compiler. "Apprentices' Database CD". An in-house compilation by the Kent History and Library Centre, Maidstone.
Lewcun	Mark Lewcun. 1995. "Kent Pipemaking Partnership Bankrupt." *SCPR Newsletter* 1995, 45, 7.
Maidstone and date	Anonymous compiler of a typed list of a 1727 Poll for Burgesses and a 1747 Poll for Two MPs. Original held at Maidstone Museum.

MAO	Anonymous compiler: "Local Manufacturers of Clay Pipes". A list held under reference VF MED 688.4 at Medway Archives and Local Studies Centre. This list provides further details on each individual pipeworker.
MFI	Maidstone Freemans' Index – part of Kent Genealogy, created by Maureen Rawson: http://freepages.genealogy.rootsweb.ancestry.com/~mrawson/ Consulted 07.04.2011 and subsequently.
Moore	Robert Moore. 1987. "Pipemakers from an Eighteenth Century Newspaper" *SCPR Newsletter* 1987, 15, 25-29.
Norton	Joe Norton. 1984, "Miscellaneous References to Pipemakers". *SCPR Newsletter* 1984, 2, 14.
Oswald1960	Adrian Oswald. 1960. "The Archaeology and Economic History of the English Clay Tobacco Pipe". *Journal of the British Archaeological Association*, 1960, 23, 40-102.
Oswald	Adrian Oswald. 1975. *"Clay Pipes for the Archaeologist"*. BAR 14. Additional information on sources is available for some pipeworkers in the Kent lists (actually drawn up by Ernest Tilley) on pages 174-176 of this book.
Owen	John Owen, Archivist Historian with Shepherd Neame, Brewers. Personal Communication. August 2008.
Smythe	List of Apprentices made c1840 by Clement Taylor Smythe, carrying the reference CTS I ff 306. Original held at Maidstone Museum.
T&H	Colin Tatman & Peter Hammond. 2004. "Tobacco Pipe Makers Within the Records of the British Lying-in Hospital, London, 1749-1868." *SCPR Newsletter* 2004, 66, 33-39.
Tilley	From the researches of Ernest Tilley – papers held by the Gravesend Historical Society.
Welby	From the researches of Douglas Welby. Personal Communications with Peter Hammond (2001).
Welby 2009	From the researches of Douglas Welby. Personal Communication with Brian Boyden 2009 (especially regarding pipemakers from Sandwich).
Williams	D. E. Williams. 1979 & 1980. "Clay Tobacco Pipes from Chatham" *Archaeologia Cantiana* (1979), 95, 231-240 and vol 96 (1980) 368-369.
Woollard1	Phillip Woollard. 2006 (for 2002). A *SCPR Newsletter* dedicated to the memory of Phillip Woollard. It contains several lists of pipemakers insured with the Sun and Royal Exchange Assurance Co.
Woollard2	Phillip Woollard (unpublished article). *"Some eighteenth century pipemakers taken from the Parish Registers of St Paul, Deptford, 1730-1800".*
Woollard3	Phillip Woollard. 2002. "William Luckett, Clay Tobacco Pipemaker of Plumstead" in *Greenwich Industrial History* 2002, 6 (and *SCPR Newsletter* 72, 2007, 21-27).

First Name/s	Surname	Town/s	Earliest Date	Latest Date	Strongest Source/s
George	Abbey	Greenwich	1855	1871	*C1871.*
George	Abbey	Greenwich	1871	1871	Bowsher. *C1871*.
John	Adds	Strood	1761	1761	Oswald 1960.
Edward	Akers	Milton next Sittingbourne	1770	1770	KHLC.
Henry Thomas	Allen	Folkestone	1849	1911	*C1881*. *C1911.*
John	Allen	Folkestone	1835	1881	K1862. *C1881*.
John	Allen	Greenwich	1827	1847	Bowsher.
Robert	Allen	Greenwich	1854	1862	Bowsher.
James	Anderson	Rochester	1846	1846	MAO
Joseph	Anderson	Rochester	1826	1868	P1826/7. P1828. P1832. P1840. P1845. M1858. PO 1855. K1862. Williams.
Richard	Anderson	Rochester	1850	1891	K1891. Williams.
William	Anderson	Rochester	1841	1841	MAO.
George L.	Andrews	Deptford	1861	1882	*C1861*. K1874. K1882.
Joseph	Andrews	Deptford	1832	1840	P1832. P1840.
Martha Louise	Andrews	Deptford	1794	1871	M1858. PO1867. *C1851*. *C1861*. *C1871*.
Thomas	Andrews	Deptford	1833	1851	*C1851.*
William	Andrews	Plumstead	1839	1901	*C1901*. Hammond1.
Louise	Andrews aka Wade	Deptford	1837	1871	*C1871.*
Richard	Archer	Dartford	1740	1740	*Daily Post* 30/04/1740. *Universal Spectator and Weekly Journal* 03/05/1740.
Thomas	Argent	Maidstone	1672	1672	KHLC.
J. or John	Arnold	Dover	1855	1855	K1855.
William	Arnold	Dover	1839	1855	P1839. P1840. PO1845. PO1852. PO1855.
John	Bagnall	Milton, Sittingbourne	1737	1742	KHLC.
Joseph	Bagnall	Rochester	1700	1700	MAO.
Martha	Bagnall	Milton, Sittingbourne	1737	1737	KHLC.
Elijah	Bailey	Tunbridge Wells then Maidstone	1797	1862	K1862. *C1841*. *C1851*.
Esther	Bailey	Maidstone	1831	1881	*C1881.*
James	Bailey	Maidstone	1830	1851	*C1851.*
Joseph	Bailey	Maidstone	1825	1901	K1882. K1891. W S Vursh's *Handy Directory of Maidstone* 1872. *C1851*. *C1911*.
Alfred	Baker	Northfleet	1851	1851	PO1851.
Harry	Baker	Chatham	1797	1854	Godfrey.
Henry	Baker	Canterbury	1726	1726	Oswald.
Henry Newton	Baker	Deal	1841	1882	K1862. K1882. PO 1852. PO1867. *C1841*. *C1851*. *C1861*. *C1871*. *C1881*.
James Isaac	Baker	Deal	1824	1857	P1824. P1826/7. P1828. P1832. P1839. P1840. Will proved 22.09.1857 (PROB 11/2257).
John	Baker	Canterbury	1708	1708	Oswald.
Richard	Baker	Deal	1803	1811	Welby.

First Name/s	Surname	Town/s	Earliest Date	Latest Date	Strongest Source/s
Samuel	Baker	Deal	1754	1825	Welby.
William	Baker	Folkestone	1824	1861	*C1861.*
John	Bame	Canterbury	1722	1722	Oswald.
A.	Barker	Gravesend	1851	1851	PO1851.
Philip	Barnabee	Deptford	1750	1754	Woollard2.
John	Barnard	Greenwich	1701	1701	Bowsher.
John	Barnett	Greenwich	1693	1707	Bowsher.
John	Bayley	Folkestone	1758	1758	Oswald.
Ann	Bean	Greenwich	1820	1846	P1839. P1840.
John	Bean	Greenwich	1764	1789	Will proved 1789 (PROB 11/1182/186).
Sarah	Bean	Greenwich	1797	1825	Mentioned in father's will (PROB 11/1182/186).
Robert	Bewley	Maidstone	1732	1747	Oswald. Maidstone 1747.
James	Binfield	Folkestone	1836	1851	*C1851.*
Alfred Charles	Birchall	Maidstone	1867	1867	PO1867.
Charles	Birchall	Chatham	1781	1853	P1832. P1839. P1840. P1851. Will proved 17.11.1853. (PROB 11/2180/237).
Charles	Birchall	Maidstone	1810	1881	M1858. PO1881. *C1861*.
Edward	Birchall	Greenwich	1871	1871	Bowsher.
George	Birchall	Chatham	1797	1840	Godfrey. MAO. Williams.
George	Birchall	Deptford	1844	1861	*C1861*.
George	Birchall	Greenwich	1804	1804	Bowsher.
I.	Birchall	Chatham	1840	1840	Williams.
James	Birchall	Dartford	1853	1881	*C1881.*
Joseph	Birchall	Deptford	1813	1861	*C1861.*
Thomas	Birchall	Deptford	1841	1861	*C1861.*
William	Birchall	Canterbury	1845	1845	PO1845.
William	Birchall	Chatham	1851	1885	M1858. PO1851. PO1855. PO1867. *C1861*.
William	Birchall	Deptford	1834	1861	*C1861.*
William	Birchall	Milton, Sittingbourne	1816	1841	*C1841.*
Joseph	Birchell	Deptford	1836	1861	*C1861.*
Sophia	Birchell	Deptford	1838	1861	*C1861.*
William	Birchell	Deptford	1836	1861	*C1861.*
Edwin	Bishop	Ramsgate	1862	1874	K1862. K1874. PO1867.
Henry Robert	Bishop	Gravesend	1845	1847	PO1845. Oswald.
John	Bishop	Gravesend	1852	1882	PO1852. PO1855. M1858. K1882.
John	Blackman	Canterbury	1722	1722	Oswald.
John	Bold	Maidstone	1823	1823	Oswald.
George	Booth	Canterbury	1744	1775	Oswald.
John	Booth	Canterbury	1733	1733	Oswald.
William	Booth	Canterbury	1710	1715	Oswald.
B.	Boswell	Dover	1752	1752	Oswald.
James	Boult	Deptford	1758	1758	Will proved 1758 (PROB 11/840).
Daniel	Bourne	Canterbury	1815	1891	*The Canterbury Directory* 1878. K1882. K1890/91. K1891. *C1881*. *C1891*.
G	Bourne	Canterbury	1894	1894	Pike 1894-95.
Isaac	Bourne	Canterbury	1867	1874	PO1867. K1874.
John	Bourne	Canterbury	1750	1760	Kent Messenger 11/07/1958.

First Name/s	Surname	Town/s	Earliest Date	Latest Date	Strongest Source/s
James	Boxer	Maidstone	1671	1671	Probate Inventory 1671(PRC/27/23/47).
H	Bradford	Chatham	1850	1850	On pipe stored at Greenwich Heritage Centre.
Thomas	Bradshaw	Deptford	1782	1782	Woollard2.
Edwin	Brann	Maidstone	1845	1847	Oswald.
Ellen	Brann	Maidstone	1850	1852	The Maidstone Enlarged Directory 1850. PO1851. PO1852.
James	Breeze	Greenwich	1854	1854	Bowsher.
William Henry	Bridge	Milton, Sittingbourne	1862	1862	K1862.
George	Brisley	Sheerness.	1851	1855	PO1851. PO1855.
William	Brisley	Canterbury	1852	1861	K1855. K1859. *Directory of Canterbury* 1855 & 1859. PO1852. PO1855. M1858. *C1861*.
Hatton aka Halton, Hulton & Hatten	Brown aka Browne	Dover	1829	c1905	M1858. K1862. K1874. K1882. K1890/91. K1891. *C1841*. *C1851*. *C1861. C1871*. *C1881. C1891. C1901.*
John	Bryant	Woolwich	1732	1732	Atkinson.
William	Buck	Chatham	1911	1911	*C1911*.
B.	Bullard	Maidstone	1723	1723	Oswald.
William	Burchall	Greenwich	1779	1861	Bowsher.
William	Burkin	Greenwich	1824	1824	Bowsher.
E	Burnett	Canterbury	1894	1894	Pike 1894/95.
William	Burnick	Greenwich	1836	1861	*C1861.*
Caroline	Burslow	Dartford	1811	1851	*C1851.*
Charles	Burslow	Dartford	1808	1851	*C1851.*
Charles James	Burstow	Greenwich	1802	1813	Bowsher.
Edward Charles	Burstow	Greenwich	1838	1871	Bowsher. *C1861*.
Elizabeth	Burstow	Deptford	1816	1861	*C1861*
Ernest	Burstow	Greenwich	1861	1891	*C1891.*
George	Burstow	Greenwich	1828	1828	Bowsher.
Henry	Burstow	Greenwich	1801	1801	Bowsher.
Horace	Burstow	Greenwich	1861	1891	*C1891.*
James	Burstow	Deptford	1781	1811	Woollard2.
James Lambert	Burstow	Deptford	1818	1851	P1840. *C1851*.
Jane	Burstow	Greenwich	1811	1825	Woollard2.
Louise	Burstow	Greenwich	1786	1841	*C1841.*
Mary	Burstow	Deptford	1811	1855	*C1851.* PO 1855.
Mary	Burstow	Deptford	1813	1871	*C1871.*
Richard	Burstow	Deptford	1846	1871	*C1871.*
Robert	Burstow	Greenwich	1791	1843	Bowsher. *C1841.*
Robert	Burstow	Greenwich	1811	1822	Bowsher.
Thomas John	Burstow	Greenwich	1814	1839	Bowsher.
William	Burstow	Greenwich	1811	1852	Robson's Directory 1845. *C1841*. *C1851*. Bowsher. Birth, Marriages and Deaths Index 1852, p324 Vol. 1d
William	Burstow	Greenwich	1836	1881	Bowsher. *C1861*. *C1871*. *C1881.*
William Robert	Burstow	Greenwich	1845	1871	PO1845. PO1851. PO1852. *C1861*. *C1871*.

First Name/s	Surname	Town/s	Earliest Date	Latest Date	Strongest Source/s
Richard Mantle (sic)	Burstow aka Barstow	Deptford	1812	1861	*C1861*. *C1871*. *C1881.*
James	Burstow aka Barstow	Greenwich	1839	1840	P1839. P1840.
William	Burstow aka Barstow	Greenwich	1789	1846	P1832. PO1845. *Robson's Directory* 1839. Bowsher.
Mary	Burstow aka Burton	Greenwich	1851	1855	PO1855. *C1851.*
Ebenezer	Button	Greenwich	1851	1851	Bowsher.
Joseph	Canlett	Greenwich	1835	1841	Bowsher.
Francis	Cant	Greenwich	1843	1843	Bowsher.
Richard	Carter	Greenwich	1794	1794	Bowsher.
George	Chalmers	Strood	1847	1847	Williams.
John	Chaplain	Maidstone	1707	1727	Maidstone 1727. KHLC.
Joseph	Charridon	Canterbury	1858	1891	*C1891.*
Evans	Cheever	Canterbury	1741	1741	Oswald.
Samuel	Choice	Rochester	1744	1744	MAO.
Edward	Christian	Canterbury 1679 then Greenwich by 1687	1679	1687	Welby. Bowsher.
Henry	Christopher	Chatham	1849	1851	Williams.
John	Chumley	Sandwich	1720	1738	Welby.
Jasper	Church	Greenwich	1834	1844	Bowsher.
Jasper	Church	Greenwich	1838	1861	*C1861*. Bowsher.
William	Church	Greenwich	1834	1834	Bowsher.
B.	Clark	Gravesend	1823	1823	Pipe stored at Greenwich Heritage Centre.
Thomas	Clark	Rochester	1772	1773	T&H.
John	Clarke	Tonbridge	1844	1911	*C1911.*
Thomas	Clifford	Maidstone, Gillingham Chatham	1806	1871	*C1841*. *C1851*. *C1861*. *C1871*.
Alfred	Coatsworth	Maidstone	1872	1891	W S Vursh's *Handy Directory of Maidstone* 1872. K1862. K1874. K1882. K1891.
Edward	Coatsworth	Maidstone	1862	1862	K1862.
Mrs Isabella	Coatsworth	Maidstone	1892	1895	K1891.
Thomas	Cole	Deptford	1778	1781	Woollard2.
Edward	Cooke	Greenwich	1822	1822	Bowsher.
William George	Cooke	Greenwich	1817	1817	Bowsher.
Ann(e)	Cope	Woolwich	1832	1845	P1832. P1839. P1840. K1845.
Thomas	Cope	Greenwich	1838	1861	*C1861*. *C1871*. *C1881*. *C1891*.
Thomas	Cope	Woolwich	1806	1874	PO1855. M1858. K1862. K1874. PO1867. *C1851. C1861*.
William	Cope	Woolwich	1839	1862	K1839. K1862. M1858. PO1851. P1855. Will: PROB 11/1763.
James	Coppin	Rochester	1728	1733	Norton.
John	Coppin	Rochester	1740	1747	MAO.
Matthew	Coppin	Rochester	1701	1701	MAO.
Charles	Cornel	Greenwich	1701	1701	Bowsher.
John	Cornes	Canterbury	1795	1795	Oswald.
John	Corns or Cornes	Rochester	1774	1795	Williams. MAO.

First Name/s	Surname	Town/s	Earliest Date	Latest Date	Strongest Source/s
James	Court	Folkestone	1826	1858	P1826/7. P1832. P1840. M1858. PO1852. PO1855.
John	Court	Folkestone	1839	1845	P1839. PO1845.
William	Court	Folkestone	1851	1851	Oswald.
Fisher	Cox	Deptford	1751	1754	Woollard2.
John	Crebb	Dartford	1841	1891	*C1891*.
Edward	Cropley	Sheerness	1823	1861	*C1851.*
Edward	Cunningham	Greenwich	1830	1883	*C1851*. *C1881*.
James	Cutbush	Maidstone	1747	1761	Maidstone 1747.
John	Dammon	Dartford	1690	1690	Probate Inventory (PROB 5/4529) but no date available. Wills of adjacent numbers are late C17, so guess Dammon is c1690.
William	Danby	Dartford	1715	1715	Oswald. MAO.
Thomas	Davis	Greenwich	1817	1817	Bowsher.
James	Dean	Tonbridge	1825	1851	*C1851.*
Henry	Dear	Dover	1826	1841	*C1841.*
William	Dilnott	Dover	1775	1775	Freedom Roll for Canterbury 1774. Oswald.
P.	Dodson	Strood	1758	1758	Oswald.
Albert	Doubtfire	Greenwich	1845	1861	*C1861.*
Frederick	Doubtfire	Greenwich	1844	1861	*C1861.*
John	Doubtfire	Greenwich	1820	1851	*C1851*. *C1861*.
Joseph	Doubtfire	Greenwich	1813	1861	*C1861.*
William	Doubtfire	Greenwich	1820	1875	PO1867. M1858. *C1861*.
William	Doubtfire	Woolwich	1720	1720	Atkinson.
James	Dray	Greenwich	1835	1835	Bowsher.
Ann	Drew	Greenwich	1771	1771	Bowsher.
Henry	Dudman	Plumstead	1825	1891	K1874. K1882. K1891. PO1867. *C1881*.
James	Dunster	Deptford	1818	1881	*C1841*. *C1881*.
Sidney	East	Ashford	1896	1911	*C1911*.
Francis Robert	Edmonds	Deptford	1760	1760	Woollard2.
George	Edwards	Westgate	1886	1911	*C1911.*
Joseph	Emerson	Greenwich	1828	1851	Bowsher. *C1851.*
Edward	Evans	Greenwich	1693	1703	Bowsher.
Edward	Evans	Rochester	1702	1702	Oswald.
John	Farrence	High Halden	1839	1839	P1839.
George	Feakins	Ramsgate	1851	1858	M1858. PO1851. PO1855.
John Richard	Feakins	Margate	1851	1874	PO1867. K1874.
John	Ferne	Canterbury	1826	1831	Oswald.
Samuel	Finch	Chatham	1847	1847	Oswald.
Thomas	Fishenden	Milton, Sittingbourne	1742	1842	Oswald.
John	Forrest	Deptford	1736	1742	Woollard2.
John	Fox	Ramsgate	1847	1847	B1847.
Christopher	Foy	Rochester	1749	1749	Oswald.
George	French	Chatham	1832	1840	P1832. P1839. P1840.
George	French	Chatham	1836	1861	*C1861*.
Samuel	French	Chatham	1832	1861	P1832. P1839. P1840. *C1841*. *C1851*. *C1861*. pers. comm. Ron Knight, great-grandson of Samuel French.

First Name/s	Surname	Town/s	Earliest Date	Latest Date	Strongest Source/s
Joseph	Funge	Woolwich	1692	1692	*Notes and Queries* 10th Series, 11, 1909, 10.
John	Gatfield	Maidstone	1722	1727	Maidstone 1727. MFI.
William	Gatfield	Maidstone	1739	1739	Smythe.
John	Gatfield aka Gatefield	Maidstone	1739	1761	KHLC. Smythe. Oswald.
Walter	Gefferys	Gravesend	1668	1668	Tilley.
William	Gill	Maidstone	1731	1731	Moore.
John	Godfield	Maidstone	1714	1722	KHLC.
George	Golding	Faversham	1805	1805	KHLC.
Frederick	Goldsmith	Tonbridge	1833	1851	*C1851.*
Richard	Goldsmith	Maidstone	1732	1736	KHLC. Smythe.
Henry	Gosling	Greenwich	1871	1891	*C1851*. *C1861*. *C1871*. *C1881*. *C1891*.
Thomas	Gosling	Chatham	1723	1735	KHLC.
William	Gosling	Greenwich. Deptford.	1801	1838	P1832. P1839. P1840.
How	Green	Maidstone	1747	1794	Oswald. 1747 Maidstone. pers. comm. Maureen Rawson (descendant). Will (PROB 11/1248) dated 30.08.1794.
How (aka Howe)	Green	Rochester	1764	1764	MAO. Oswald. pers. comm. Maureen Rawson (descendant).
James	Green	Maidstone	1761	1812	Oswald.
James	Green	Maidstone	1790	1790	MAO. pers. comm. Maureen Rawson (descendant).
Henry	Griffiths	Greenwich	1826	1837	Bowsher.
John	Griffiths	Woolwich	1841	1851	*C1851*.
John	Griggs	Dover	1768	1768	Frost.
John	Griggs aka Gregg	Dover	1714	1714	Frost. Oswald.
John	Grindall	Maidstone	1729	1729	KHLC.
Samuel	Gurlyn aka Gurlin	Sandwich	1738	1750	Will (PROB 11/779) proved 14.05.1750. Hammond2. Welby.
John	Hadds aka Hads	Rochester, Maidstone Strood.	1702	1734	MAO. Maidstone 1727. KHLC.
Christopher	Hadds aka Hads	Rochester	1771	1771	Oswald.
John	Hadel	Maidstone	1702	1702	Smythe.
John	Hales aka Halls	Rochester	1771	1774	Williams.
John	Hallaway	Maidstone	1709	1727	Maidstone 1727.
John	Hallaway	Maidstone	1717	1717	Probate Inventory 1717 (PRC/27/40/86)
Richard	Halloway	Maidstone	1700	1700	KLHC.
Charles Richard	Hambrook	Dover	1826	1881	PO1845. K1855. *C1841*. *C1851*. *C1861*. *C1871. C1881*
George Frederick	Hambrook	Dover	1822	1852	Frost.
James	Hambrook	Dover	1785	1855	P1824. P1826/7. P1828. P1832. P1839. P1840. *C1841.*
John	Hambrook	Dover	1780	1792	UBD1792. Frost.
Stephen	Hambrook	Dover	1809	1809	Frost.

First Name/s	Surname	Town/s	Earliest Date	Latest Date	Strongest Source/s
James	Hams	Folkestone	1850	1930	K1882. K1890/91. K1891. K1903. K1913. K1918. K1924. K1927. K1930.
James & Mrs Christian	Harding	Deal	1676	1676	Welby.
John	Harman	Plumstead	1911	1911	*C1911*.
Francis	Harrison	Canterbury	1874	1891	*C1891.*
Francis Robert	Harrison	Canterbury	1852	1913	Pike1894/95. Pike1893. K1874. K1882. K1903. K1913. *C1881*. *C1891*. *C1911*.
Frederick	Harrison	Canterbury	1875	1891	*C1891.*
William	Harrison	Deal	1824	1871	PO1867. *C1871*.
Edward	Hartley	Canterbury	1741	1741	Oswald.
Daniel	Harvey	Dover	1752	1755	KHLC.
John	Harvey	Dover	1755	1810	KHLC. Hammond3.
Isaac	Harwood	Deal	1782	1782	Woollard1.
John	Hawley	Chatham	1864	1901	*C1901.(moved to Bethnal Green)*
John	Hawley	Chatham	1821	1871	*C1851*. *C1861*. *C1871*.
William	Haysley	Dover	1763	1810	Hammond3.
Joseph	Hayward	Cranbrook	1720	1720	KHLC.
Hannah	Hearnday	West Malling	1756	1756	Oswald.
John	Hedgecock	Dover	1826	1826	Research by Frost, quoted by Welby.
John	Heley	Maidstone	1702	1702	Smythe.
John	Henshaw	Woolwich	1718	1718	Atkinson.
Samuel	Hensher aka Hemker	Chatham	1862	1862	From Hensher/Robertson family on Rootsweb.com *C1871*.
William	Herbert	Chatham	1757	1757	Lewcun.
Nathaniel	Herring	Canterbury	1683	1711	Probate Inventory 1711 (PRC/11/70/242).
Nathaniel	Herring	Canterbury	1683	1722	Welby.
William	Herring	Canterbury	1688	1688	Welby.
John	Hewley	Chatham	1858	1877	MAO.
John	Hicks	Strood	1659	1659	Cessford.
Edward	Higgs	Greenwich	1836	1869	*C1851*. Bowsher.
Henry	Higgs	Greenwich	1796	1883	P1839. P1840. *C1851*. Bowsher.
Jonathan	Hiley	Maidstone	1712	1712	KHLC.
Jonathen	Hill aka Hills	Gravesend, Maidstone	1722	1761	Oswald. Maidstone 1727. Maidstone 1747.
unknown	Hillery	Greenwich	1790	1790	Bowsher.
Jn	Hillman	Deptford	1891	1891	K1891.
John	Hills	Maidstone	1747	1747	Maidstone 1747.
Thomas	Hills	Maidstone	1727	1739	Smythe. Maidstone1727. KHLC.
Richard	Hinchman	Greenwich	1712	1712	Bowsher.
George	Hinkins	Chatham	1847	1913	K1903. K1913. *C1901*. *C1911*.
Lily	Hinkins	Chatham	1886	1911	*C1911.*
Mary	Hinkins	Chatham	1847	1901	*C1901*.
Richard	Hinkins	Chatham	1850	1880	Williams.
Richard	Hinkins	Chatham	1886	1940	*C1911*. Williams.
William	Hinkins	Chatham	1881	1911	*C1901*. *C1911*.
Richard	Hogben	Canterbury	1702	1702	Probate Inventory 1702 (PRC/11/63/83)
Robert	Hogben	Canterbury	1696	1696	Welby.
John	Holford	Maidstone	1704	1753	KHLC.

First Name/s	Surname	Town/s	Earliest Date	Latest Date	Strongest Source/s
Anne	Holloway	Maidstone	1720	1720	KHLC.
John	Holloway	Chatham	1676	1699	MAO.
John	Holloway	Maidstone	1699	1699	MAO.
John	Holloway	Maidstone	1714	1753	MFI. Smythe.
Richard	Holloway	Maidstone	1695	1716	Probate Inventory 1716 (PRC/27/40/36). MFI. KHLC.
Richard	Holloway	Maidstone	1753	1753	Smythe.
Stephen	Holloway	Gravesend	1682	1697	Oswald.
Abraham	Holmes	Gravesend	1771	1844	*C1841*. Hammond3.
Thomas	Holness	Canterbury	1727	1727	Welby.
John	Hopkins	Chatham	1823	1823	T&H.
John	Hornesby	Deal	1674	1674	Welby.
Robert	Hornsby	Canterbury	1700	1718	Oswald. Probate Inventory 1718 (PRC/11/74/42).
Robert	Hornsby (aka Hornsbey)	Canterbury	1674	1674	Oswald.
Robert	Hoskins	Deal	1713	1713	Welby.
James	How	Maidstone	1687	1727	Maidstone 1727. pers. comm. Maureen Rawson, descendant.
William	Howe	Dartford	1820	1861	*C1861*
unknown	Hughey aka Hughy	Greenwich	1785	1785	Bowsher.
William	Hughey aka Hughy	Rochester	1806	1806	MAO.
C	Hull	Herne Bay	1894	1894	Pike 1894/95.
Thomas	Hull	Faversham. Rochester.	1757	1785	Owen.
A. or Alfred	Hunt	Sheerness-on-Sea	1847	1903	K1891. K1903. *C1851*. *C1861*. *C1871*. *C1891*. *C1901*.
Ann	Hunt	Dartford	1818	1851	*C1851.*
Henry	Hunt	Maidstone	1816	1852	Oswald 1960. PO1845. PO 1852. Bg1848. *C1851*.
Henry	Hunt	Sheerness. Chatham	1794	1871	PO1832. PO1855. *C1841*. *C1851*. *C1861*. *C1871*.
Joseph	Hunt	Chatham	1834	1861	*C1841*. *C1851*. *C1861*.
Walter	Hunt	Sheerness	1845	1861	*C1861.*
William	Hunt	Chatham	1820	1841	*C1841*.
William	Hunt	Dartford	1815	1851	*C1851*. *C1861*. *C1871*.
William George	Hunt	Sheerness	1843	1861	*C1861*.
William Henry	Hunt	Sheerness	1820	1874	M1858. PO1845. PO1855. PO1867. K1862. K1874. *C1841. C1851*. *C1861*. *C1871.*
Henry	Hunt Jnr (sic)	Sheerness	1839	1840	P1839. P1840.
James	Huntley	Riverhead, Sevenoaks	1749	1763	Woollard1.
J.	Huntweek	Dover	1839	1839	Oswald 1960.
Edward	Irish	Faversham	1822	1838	Faversham Baptism records (pers.comm. Peter Hammond).
William B	Isaacs	Chatham	1827	1871	*C1871*.
James	Ives	Greenwich	1871	1871	Bowsher.
James	Jefferys	Deptford	1811	1883	Bowsher.
Henry	Jeffrey aka Jeffreys	Maidstone	1702	1761	Maidstone 1727. Maidstone 1747. KHLC.

First Name/s	Surname	Town/s	Earliest Date	Latest Date	Strongest Source/s
Samuel	Jeffreys	Maidstone	1747	1761	Maidstone Poll 1747. Oswald.
Walter	Jeffreys	Gravesend	1676	1676	Oswald. Tilley.
William	Jeffreys	Gravesend	1696	1696	Tilley.
Edward	Jenkins	Maidstone	1695	1698	Smythe.
Rueben	Jennings	Chatham	1831	1831	Williams.
John	Johnson	Gravesend	1763	1797	Oswald.
John Rogers	Johnson	Dover	1867	1867	PO1867.
Thomas	Johnson	Gravesend	1726	1765	Tillet. KHLC.
Thomas	Johnson	Gravesend	1764	1778	KHLC. Woollard 1. KHLC.
William	Johnson	Gravesend	1784	1784	Oswald: 1975.
Alfred	Jones	Dartford	1839	1891	*C1891*.
Edward	Kemp	Greenwich	1854	1854	*C1871*.
James	Kemp	Greenwich	1827	1886	*C1861.*
William	Kemp	Greenwich	1824	1857	*C1851.*
Arthur	Kennett	Dartford	1864	1881	*C1881*.
Mathew (sic)	Kight (sic)	Maidstone	1714	1719	KHLC.
Henry	King	Rochester	1708	1708	MAO.
Thomas	King	Canterbury	1651	1678	Oswald.
Benjamin	Kipps	Sandwich	1760	1805	Welby 2009.
Henry	Kipps	Deal Sandwich	1706	1780	Welby 2009.
Henry	Kipps	Ramsgate Sandwich	1725	1790	Welby 2009.
Henry	Kipps	Sandwich Ramsgate	1746	c1840	Welby 2009.
Henry	Kipps	Sandwich Ramsgate	1774	1792	Welby 2009.
James	Kipps	Deal Dover Ramsgate	1801	after 1838	Welby 2009.
Thomas	Kipps	Deal Ramsgate	1690	1761	Welby 2009.
Thomas	Kipps	Ramsgate Deal Sandwich	1715	c1764	Welby 2009.
Thomas	Kipps	Rochester, Sandwich Deal	1689	1723	Williams. Welby 2009. MAO. Probate Inventory 1723 (PRC/27/41/120).
Thomas	Kipps	Sandwich	1785	1808	Welby 2009. pers. comm. John Spain, in contact with descendant Brian Kipps.
Thomas	Knott	Canterbury	1659	1659	Oswald.
James	Knowler	Faversham	1843	1891	K1882. K1891. *C1891*.
John	Langley	Deptford	1725	1744	Will (PROB 11/731). Atkinson.
Sarah	Langley	Deptford	1744	1756	Will (PROB 11/731). Woollard2.
Lane	Lawrence	Rochester	1705	1705	MAO.
William	Lawrence aka Lawrance	Faversham	1705	1735	Owen. Probate Inventory 1732-35 (PRC/11/80/178).
Arthur	Leach	Rochester	1882	1901	*C1901.*
Charles W	Leach	Chatham then Rochester	1853	1871	K1903. *C1871*. *C1901*.
George E	Leach	Chatham	1838	1871	*C1871*.
Leonard	Leach	Rochester	1886	1901	*C1901.*

First Name/s	Surname	Town/s	Earliest Date	Latest Date	Strongest Source/s
Christopher	Legett aka Legatt	Milton, Sittingbourne	1695	1716	MAO. Probate Inventory 1716 (PRC/11/73/69).
Joseph	Libon	Rochester	1741	1741	Oswald. Williams.
John	Lipton	Rochester	1741	1741	Oswald.
William	Long	Woolwich	1688	1720	Atkinson.
Thomas	Longley	Dover	1763	1763	Hammond3.
Thomas	Longley aka Langley	Dover	1714	1750	Oswald.
John	Longworth aka Longsworth	Plumstead	1861	1901	Woollard3. *C1901*,
Thomas	Luck	Maidstone	1697	1697	Smythe.
William	Luckett	Plumstead	1865	1948	*C1891*. Woollard3.
Eliza	Lunnon	Maidstone	1862	1862	K1862.
W.	Lunnon	Maidstone	1855	1858	M1858. PO1855.
John	Lyne	Canterbury	1620	1634	Oswald.
John	Macfield	Rochester	1705	1705	MAO.
Thomas	Male	Deptford	1749	1749	Woollard2
Edward	Manby	Deptford	1746	1770	Woollard2
Thomas	Maplesdon	Maidstone	1759	1759	Smythe.
John	Maplesdon aka Maplesden & Maplestone	Milton next Sittingbourne Maidstone	1722	1743	Insolvent debtor, described as a Victualler and Pipemaker in *London Gazette* 20/08/1743. Oswald. KHLC.
George	Martin	Woolwich	1819	1851	pers. comm. Victoria Gunnell, descendant. *C1841*. *C1851*.
Michael William	Martin	Woolwich	1784	1870	P1832. P1839. P1840. P1847. pers. comm. Victoria Gunnell, descendant. *C1841*. *C1851*.
Robert	Martin	Greenwich	1836	1851	Bowsher. *C1851.*
Thomas	Martin	Chatham	1817	1911	*C1911*.
William	Martin	Rochester	1817	1817	MAO.
Francis	Mascall	not stated	1737	1737	KHLC.
John	Matthews	Maidstone	1747	1747	Maidstone 1747.
John	May	Canterbury	1704	1704	Oswald.
Joseph	May	Dartford	1816	1845	*C1841*.
J	McMillan	Canterbury	1865	1865	*Maidstone, Canterbury, Dover and Tonbridge Directory and Court Guide* 1865-66 (from research supplied to David Higgins by John Cottar).
John	McMillan	Margate	1801	1841	*C1841.*
Peter	McMillan	Margate	1839	1839	Oswald.
Richard	Meeking	Greenwich	1791	1794	Bowsher.
Ebenezer	Melvill	Chatham	1828	1851	*C1841*. *C1851*.
Elizabeth	Middleton	Maidstone	1724	1732	Oswald 1960.
John	Middleton	Maidstone	1712	1712	KHLC.
George	Miller	Dartford	1831	1881	*C1851*. *C1861*. *C1871*. *C1881*.
Mary	Miller	Dartford	1831	1861	*C1861.*
James	Milsom	Rochester	1751	1751	Oswald.
Joseph	Milsom aka Millsom	Rochester	1747	1780	Oswald.

First Name/s	Surname	Town/s	Earliest Date	Latest Date	Strongest Source/s
John	Mitchell	Eastchurch (Isle of Sheppey)	1659	1659	KHLC.
Ann	Moore	Dartford	1813	1851	*C1851.*
David	Moore	Dartford	1823	1861	*C1851*. *C1861*.
Joseph	Moore	Woolwich	1723	1723	Atkinson.
William	Morgan	Deptford	1778	1778	Woollard2.
James	Morris	High Halden	1839	1839	P1839.
George	Morton	Woolwich	1849	1911	*C1911*. Worked in London & Manchester
Richard	Moyse	East Malling	1732	1732	KHLC.
Edward	Mumford	Canterbury	1863	1881	*C1881*.
Elizabeth	Murphy	Greenwich	1818	1861	*C1861.*
George	Murphy	Greenwich	1815	1861	*C1861*.
Joseph V	Naney	Plumstead	1835	1871	*C1871.*
George	Nethercole	Margate	1827	1841	*C1841*.
Richard	New	Greenwich	1698	1698	Bowsher.
Charles	Newman	Greenwich	1853	1861	*C1861.*
George	Newman	Greenwich	1814	1871	*C1851. C1861. C1871.*
George	Newman	Greenwich	1846	1861	*C1861.*
James	Newman	Greenwich	1849	1861	*C1861.*
Maria	Newman	Greenwich	1818	1881	*C1861*. *C1871*.
Samuel	Newman	Greenwich	1852	1861	*C1861.*
Thomas	Newman	Greenwich	1881	1883	Bowsher.
Thomas	Nicholls	Canterbury	1714	1714	Oswald.
Stephen	Page	Maidstone	1734	1734	Smythe. MFI.
Stephen	Page Sr (sic)	Maidstone	1681	1729	Smythe. MFI.
Humphrey	Parbatt	Woolwich	1729	1729	Atkinson.
Ann	Parker	Margate	1839	1840	P1839. P1840.
Caleb	Parker	Canterbury	1733	1733	Oswald.
Caleb	Parker	Canterbury	1760	1789	Oswald.
George	Parker	Canterbury	1727	1754	Oswald.
Jesse	Parker	Canterbury	1790	1847	P1824. P1826/7. P1828. P1832. P1839. P1840. PO1845. *Canterbury Directory* 1846. Bg1847. *C1841*.
John	Parker	Canterbury	1795	1807	H1805. H1806. H1807. Oswald.
John	Parker	Canterbury Margate	1826	1840	P1826/7. P1828. P1832. P1839. P1840.
John	Parker	Margate	1826	1832	P1826/7. P1828. P1832.
John	Parker	Ramsgate	1845	1845	PO1845.
Joyce	Parker	Canterbury	1805	1807	H1805. H1806. H1807.
Paul	Parker	Canterbury	1698	1733	Oswald.
Paul	Parker	Canterbury	1722	1754	Oswald.
Thomas	Parker	Canterbury	1715	1715	Oswald.
Thomas	Parker	Canterbury	1795	1839	Oswald.
Thomas	Parker	Greenwich	1818	1841	*C1841.*
Thomas	Parker	Margate	1862	1862	K1862.
William	Parker	Canterbury	1754	1754	Oswald.
Mathew or Matthew	Parslee	Canterbury	1714	1714	Oswald.
J.	Parsons	Canterbury	1845	1845	Oswald.
John	Partridge	Rochester	1712	1712	Oswald 1960.
Henry William	Pascall	Dover	1824	1832	P1824. P1826/7. P1828. P1832.
I.P.	Pascall	Dartford	1845	1845	PO1845.

First Name/s	Surname	Town/s	Earliest Date	Latest Date	Strongest Source/s
Thomas	Pascall	Dartford Rochester	1806	1861	P1832. P1839. P1840. P1845. P1851. P1855. K1855. *C1841*. *C1851*. *C1861*.
Thomas	Patten	Rochester	1707	1707	MAO.
George	Penn	Maidstone	1700	1707	KHLC.
G.	Penny	Garden Lane, Tunbridge Wells	1855	1855	PO1855.
George	Penny	Ashford	1851	1851	*C1851*.
C.	Philley	Gravesend	1840	1840	Williams.
Arthur	Phillips	Ashford	1881	1901	*C1901*.
George	Phillips	Chatham	1847	1847	Williams. PO1855. PO1867. K1874. K1882. *C1851*. *C1861*. *C1871*. *C1881*.
Henry or H.J.R.	Phillips	Ashford	1864	1918	K1903. K1918. *C1871. C1881*. *C1891. C1901*. *C1911.*
John	Phillips	Ashford	1818	1891	K1855. K1862. K1874. K1882. K1891. PO1851. PO1852. PO1867. *C1891. C1881. C1871. C1861 C1851 C1841.*
John	Phillips	Rochester	1712	1712	MAO.
John	Pickett	Maidstone	1722	1722	KHLC.
Richard	Pierce	Rochester	1733	1733	MAO.
William	Pierson	Canterbury	1847	1847	Br1847.
John	Pinkard	Woolwich	1732	1732	Atkinson.
James	Pippens	Maidstone	1850	1850	P1850.
Thomas	Port	Canterbury	1814	1881	*C1881*.
William	Porter	Tunbridge Wells	1838	1911	*C1911*.
Matthew	Pouke	Canterbury	1714	1714	Oswald 1960.
Thomas	Pout	Canterbury	1747	1747	Oswald.
William	Pout	Canterbury	1734	1750	Oswald.
Henry	Prick	Greenwich	1704	1704	Bowsher.
Matthew	Pullee aka Poullee	Canterbury	1714	1714	Welby.
Thomas	Purlis	Maidstone	1735	1735	KHLC.
Stephen	Pye	Maidstone	1695	1695	Smythe.
John	Rawlings	Canterbury	1719	1727	Maidstone 1727. KHLC.
Edward	Reade aka Reed	Faversham	1667	1679	KHLC.
William	Reed	Dartford	1827	1851	*C1851*.
Daniel	Remvant aka Remnant	Rochester	1684	1707	Williams. MAO.
Amy	Richards	Milton, Sittingbourne	1770	1770	KHLC.
George	Richards	Dover	1789	1789	KHLC.
Samuel	Richards	Milton, Sittingbourne	1770	1786	Will (PROB 11/1144) proved 21.07.1786 (Hammond2).
William	Richardson	Folkestone	1805	1805	Woollard1.
Phillip	Richmond	Maidstone Tonbridge Chatham	1821	1881	PO1845. PO1851. PO1855. PO1867. K1862. *Nottinghamshire Guardian* 29-01-1869. *C1841. C1851. C1861. C1871. C1881.*

First Name/s	Surname	Town/s	Earliest Date	Latest Date	Strongest Source/s
John	Ridelle aka Riddell	Lewisham	1800	1861	*C1861.*
John	Ridgen	Maidstone	1704	1722	Maidstone 1727. KHLC.
Robert	Ridgen	Maidstone	1722	1722	Maidstone 1727. KHLC.
John	Robins	Maidstone	1723	1723	Oswald.
Laura	Rooke	Dartford	1831	1881	*C1861*. *C1881*.
Laura	Rooke	Dartford	1831	1881	*C1861. C1881.*
William	Rooke	Dartford	1826	1881	*C1841*. *C1851*. *C1861*. *C1871*. *C1881*.
Thomas	Roscoe	Greenwich	1851	1851	Bowsher.
William	Rotherburg	Plumstead	1840	1861	*C1861.*
William	Rumble	Greenwich	1837	1861	*C1861*.
Charles	Rumley	Dartford	1876	1901	*C1891. C1901.*
George	Rumley	Dartford	1834	1851	*C1851*.
George	Rumley	Dartford	1863	1901	*C1881*. *C1891*. *C1901*.
James	Rumley	Gravesend	1773	1773	Oswald.
James	Rumney. Sometimes Rumley	Dartford	1837	1901	K1882. K1891. *C1851*. *C1871*. *C1881*. *C1891*. *C1901*.
George	Ryder	Deptford	1797	1803	Woollard2.
Thomas	Sales	Dover	1749	1749	Frost.
Thomas	Sandall	Greenwich	1855	1855	Bowsher.
J.	Sandy	Gravesend	1873	1873	Oswald.
William	Sandy	Dartford	1828	1891	K1862. K1874. *C1861*. *C1871*. *C1881*.
Joseph	Saunders	Tonbridge	1874	1874	K1874.
William	Saxby	Faversham	1874	1874	K1874.
Gervas	Scott	Maidstone	1711	1711	Maidstone 1727. KHLC.
Francis	Shaw	Maidstone	1850	1850	*James Pippenden's Maidstone Enlarged Directory* 1850.
J.	Shaw	Maidstone	1839	1839	Oswald.
John	Shaw	Rochester	1806	1806	MAO.
Thomas	Shaw	Maidstone	1839	1840	P1839. P1840.
William Henry	Shaw	Maidstone	1845	1848	PO1845. Bg1848.
Elizabeth	Sheepwash	Faversham	1805	1828	P1824. P1826/7. P1828.
John	Sheepwash	Faversham	1774	1840	Owen. P1832. P1839. P1840. UBD1792. KHLC.
John	Sheepwash	Faversham	1821	1871	*C1841*.
John	Sheepwash	Faversham Canterbury	1801	1871	P1832. P1840. PO1845. PO1851. PO1852. PO1855. K1855. M1858. *C1841*. *C1851*. *C1861*.
Sarah	Sheepwash	Faversham	1862	1867	K1862. PO1867.
Walter	Sheepwash	Canterbury	1845	1845	PO1845.
William	Sheepwash	Canterbury	1845	1845	Oswald.
William	Sheepwash	Faversham	1798	1798	KHLC.
Mary	Shore	Deal	1676	1696	Welby.
Ann	Short	Greenwich	1824	1871	*C1871.*
George	Short	Greenwich	1853	1871	*C1871.*

First Name/s	Surname	Town/s	Earliest Date	Latest Date	Strongest Source/s
Samuel	Short	Greenwich	1824	1861	*C1861*. *C1871*.
Samuel	Short	Greenwich	1851	1881	*C1871*.
Richard	Shrewsbury	Folkestone	1855	1874	M1858. K1855. K1862. K1874. PO1867.
Edwin	Sibon	Gravesend	1836	1851	*C1851*.
Richard	Simmons	Greenwich	1764	1808	Bowsher.
Richard	Simons	Deptford	1771	1816	Woollard2.
Edward	Slater	Chatham	1757	1757	Lewcun.
John	Sloper	Gravesend	1790	1840	MAO. P1828. P1832. Will (PROB 11/1926) proved 20.04.1840.
John	Sloper	Gravesend	1834	1851	*C1851*.
John	Sloper	Rochester	1765	1771	Williams. MAO.
Joseph	Sloper	Gravesend	1830	1874	PO1852. PO1855. K1862. K1874. *C1851*
Joseph (John in Oswald.)	Sloper	Gravesend Milton	1841	1875	*Gravesend Directories* 1841-1875. *Gravesend Rate Book* 1842 & 70 (Tilley). *C1851.*
Bulger	Smallwood	Rochester	1711	1711	MAO.
John	Smart	Rochester	1859	1868	Williams.
Charles	Smith	Greenwich	1831	1851	Bowsher.
Edward	Smith	Woolwich	1696	1699	Atkinson.
Elizabeth	Smith	Greenwich	1871	1871	Bowsher.
Frederick	Smith	Greenwich	1831	1866	Bowsher.
J.	Smith	Chatham	1825	1825	Williams. Cufley.
John	Smith	Rochester	1877	1877	MAO.
Thomas	South	Canterbury	1701	1701	Welby.
Mary	Southerland	Greenwich	1794	1861	*C1851*.
Thomas	Southerland	Greenwich	1798	1851	*C1851*.
William	Southerland	Greenwich	1828	1851	*C1851.*
James	Sowell	Dover	1765	1765	Hammond3.
Edward	Spain	Deal Sandwich	1797	1869	P1832. P1839. P1840. PO1851. PO1855. PO1867. K1862. K1874. *C1841. C1851. C1861*. pers. comm. John Spain - descendant. Welby 2009.
Edward Beerling	Spain	Sandwich	1823	1881	*C1841. C1851. C1861. C1871*. *C1881*. pers. comm. John Spain, descendant. Welby 2009.
George	Spenland aka Spenburn.	Rochester	1751	1751	Oswald.
John	Stanley	Maidstone	1731	1731	Oswald 1960.
Jane	Staples	Maidstone	1839	1840	P1839. P1840.
William	Stapleton	Greenwich	1818	1818	Bowsher.
John	Steel	Ramsgate	1816	1882	K1874. K1882. PO1845. *C1871*.
Edward	Steele	Woolwich	1686	1686	Atkinson.
Mary	Stiles	Sheerness	1839	1840	P1839. P1840.
Peter	Stiles	Chatham	1822	1824	MAO.

First Name/s	Surname	Town/s	Earliest Date	Latest Date	Strongest Source/s
Stephen	Stiles	Sheerness	1832	1832	P1832.
Richard	Strods	Maidstone	1739	1739	Smythe.
Henry	Stubbs	Greenwich	1851	1881	Bowsher. *C1861*. *C1901*. Hammond1.
Henry	Stubbs	Plumstead	1866	1901	*C1881*. *C1891*. Woollard3.
Henry	Stubbs	Plumstead	1866	1881	*C1881.*
John	Stubbs	Dartford Chatham	1838	1905	*C1861*. *C1871*. *C1891*. *C1901*. Hammond1.
Thomas	Stubbs	Plumstead	1861	1881	*C1881.*
Thomas Jeptha	Stubbs	Plumstead	1839	1912	*C1861*. *C1881*. K1890/91. Hammond1. Woollard3.
Walter	Stubbs	Plumstead	1868	1881	*C1881*.
Peter	Styles	Chatham	1822	1822	Williams.
Peter	Styles	Dover	1826	1826	Frost.
John	Sullivan	Greenwich	1881	1881	Bowsher.
Edward	Sutton	Gravesend	1709	1737	KHLC.
James	Sutton	Rochester	1699	1707	Bowsher. Oswald 1960.
John	Sutton	Greenwich	1698	1698	Bowsher.
Richard	Sutton	Gravesend	1695	1731	Oswald.
Jesse	Swabie aka Swabey	Folkestone	1824	1858	M1858. P1824. P1826/7. P1832. P1839. P1840. K1855. PO1824. PO1845. PO1852. PO1855.
James	Swinyard	Maidstone	1734	1734	KHLC.
Thomas (Jnr)	Swinyard	Maidstone	1727	1727	Maidstone 1727.
William	Swinyard	Dover	1809	1864	pers.comm. Sheila Jelley, descendant.
Matthew	Tapley	Maidstone Chatham	1713	1713	pers. comm. Colin Tapley, descendant.
William	Tapley	Rochester	1705	1716	Probate Inventory 1716-17 (DR6/Pi31/38 AB). pers. comm. Colin Tapley, descendant.
Edward A.	Taylor	Plumstead	1836	1871	*C1851. C1861*. *C1871*.
Henry	Taylor	Maidstone	1714	1727	Maidstone 1727.
Rebecca	Taylor	Plumstead	1839	1861	*C1861.*
Thomas	Thicket	Greenwich	1801	1833	Bowsher.
Thomas	Thatcher	Deptford	1798	1799	Woollard2.
John or James	Thompson	Strood, Milton, Sittingbourne	1657	1669	Tilley. Cessford.
John	Tinge	Greenwich	1840	1864	*C1861*.
James	Tomlin	Greenwich	1833	1841	Bowsher.
John	Thompson	Gravesend	1676	1676	Oswald.
Charles	Townsend	Sevenoaks	1737	1737	*London Gazette* 27 August 1737 (from David Higgins).
Thomas	Stretcher	Deptford	1749	1749	Woollard2.
Edward	Tuck	Canterbury	1690	1710	Oswald.

First Name/s	Surname	Town/s	Earliest Date	Latest Date	Strongest Source/s
John	Tuck	Canterbury	1673	1674	Oswald.
John	Tuck	Canterbury	1675	1684	Oswald. Cessford.
John	Tuck	Canterbury	1681	1681	Cowper.
John	Tuck	Canterbury	1712	1730	Oswald.
Thomas	Tuck	Canterbury	1642	1675	Oswald. Cessford.
Thos. or Thomas	Tuck	Canterbury	1620	1640	Oswald.
Thomas	Tucker	Canterbury	1642	1642	Oswald.
Thomas	Take	Canterbury	1656	1656	Rhodes, A. "Suspected Persons in Kent" *Archaeologia Cantiana* 1898, 23, 68-77.
Benjamin	Turner	Gravesend	1784	1787	Oswald. Hammond2. . Will (PROB 11/1150) proved 06.02.1787.
John	Turner	Greenwich	1703	1704	Bowsher.
William	Valise	Maidstone	1832	1832	P1832.
Giles	Wade	Canterbury	1730	1730	Cowper.
William	Walton	Gravesend	1784	1784	KHLC.
Thomas	Waters	Greenwich	1685	1685	Bowsher.
John	Watson	Rochester	1847	1856	Williams.
John	Watts	Maidstone	1697	1697	MFI.
John	Watts	Tunbridge	1698	1698	Smythe.
George	Webb	Chart	1700	1700	Oswald 1960.
James	Webb	Woolwich	1805	1832	Atkinson.
John	Webb	Deptford	1747	1749	Woodland.
John	Webb	Greenwich	1847	1849	Bowsher.
Mr	Webb	Folkestone	1728	1728	*Fog's Weekly Journal* November 1728 (from David Higgins).
Sophia	Webb	Rochester	1824	1824	P1824.
Thomas	Webb	Rochester	1774	1816	MAO.(Freedom pre 1774)
Thomas	Webb	Rochester	1802	1816	MAO (Freedom 1802).
William	Webb	Chatham	1837	1837	Williams.
William	Webb	Milton, Sittingbourne	1845	1891	M1858. PO1845. PO1851. PO1855. K1874. K1882. K1891. *C1871*.
William	Webb	Smarten Sittingbourne	1862	1867	K1862. PO1867.
James	Weeks	Greenwich	1814	1814	Bowsher.
William	Well	Sittingbourne	1845	1845	Oswald.
George	Wellston	Dover	1830	1830	Frost.
Thomas	Walton	Canterbury	1690	1692	Paul Cannon 2002. "Clay Pipe Research on the Internet" *SCPR Newsletter* 59 2002 p 16-24.
Arthur	Wheeler	Gravesend	1851	1828	*C1851*.
John	Wheeler	Canterbury	1814	1861	*C1861.*
William	Whitewood	Deptford	1764	1764	Woollard2.

First Name/s	Surname	Town/s	Earliest Date	Latest Date	Strongest Source/s
John	Whybrow aka Wilbrow	Dartford	1819	1855	Dartford Baptism records (pers. comm. Peter Hammond).
William	Wickes	Dover	1747	1747	Probate Inventory 1747 (PRC/27/63/144).
Thomas	Wildey	Faversham	1819	1819	KHLC.
John	Wilkins	Maidstone	1695	1698	Smythe.
Arnold	Williams	Dover	1840	1840	P1840.
John	Willoughby	Canterbury	1698	1698	Welby.
J.	Winyard	Chatham	1840	1840	Oswald. MAO.
Originall	Wise	Gravesend	1697	1697	Oswald.
Edward	Wood	Dover	1763	1763	KHLC.
John	Wood	Faversham	1839	1861	*C1861*.
Thomas	Wood	Faversham	1699	1699	MFI
Daniel	Woodhouse	Rochester	1741	1771	Oswald.
Nathaniell	Woodhouse	Maidstone Rochester	1702	1727	MFI. Maidstone 1727.
Peter	Woodhouse	Maidstone	1702	1702	MFI.
John	Woodroffe	Woolwich	1799	1832	Atkinson.
John	Woollett	Maidstone	1704	1710	KHLC.
Thomas	Wordby	Dartford	1813	1851	*C1851*.
Robert	Worthington	Canterbury	1741	1741	Welby.
John	Wright	Rochester	1717	1717	pers. comm. Colin Tapley.
Thomas	Wright	Deptford	1730	1737	Woollard2.
Ann	Wybrow aka Wibrow	Dartford	1823	1851	*C1851.*
Charles	Yonwin	Gravesend Dartford	1847	1880	Oswald. Colin Tatman 1999. "The History and Development of the Tobacco Pipe Maker's Arms 1663-1956" *SCPR Newsletter* 56, 1999, 16-18.
William	Young	Plumstead	1846	1871	*C1871.*

In addition, Oswald (1975) included two pipemakers who lived in Rye, a town in Sussex: William Apps, active 1839, and James Carter, active 1689. As the list above contains only Kentish pipe workers, their names have not been included here.

Two further workers might be included. They were pipe mould makers, known to have lived in Kent:
William Bagshaw, born 1822. Worked in Greenwich. Brother of Edward. Sources: Bowsher and C1861.
Edward Bagshaw, born 1835. Worked in Greenwich. Brother of William. Sources: Bowsher and C1851.
(Shown as a carpenter in Sheerness in C1861.)

BIBLIOGRAPHY

Adams, W. and Adams, E. 2008. *Archaeological Typology and Practical Reality.* Cambridge: Cambridge University Press.

Aldenderfer, M. 2010. *Typological Analysis.* Available from http://www.jrank.org/history/pages/6587/Typological-Analysis.html (Accessed: 13 January 2010).

Alexander, L. T. 1985. 'Clay Pipes with Irish Affiliations'. *Historic Clay Tobacco Pipe Studies* 3, pp. 69-75.

Alford, W. E. 1973. *W.D. & H.O. Wills and the Development of the UK Tobacco Industry 1786-1965.* London: Methuen & Co Ltd.

Allen, D. E. and Anderson, P. F. 1994. 'Consumption and Social Stratification: Bourdieu's Distinction'. *Advances in Consumer Research* 21, pp 70 – 74.

Andrews, J. 1987. 'The Seventeenth Century Pipemakers of York' in *Newsletter of the Society for Clay Pipe Research* 13, pp. 2-9.

Anon. 2013 Definition of Historical Archaeology. Available from: http://archaeology.about.com/library/glossary/bldef_historical.htm (Accessed 11 October 2013).

Anon. 2007 'Interim Reports on Recent Work Carried Out By the Canterbury Archaeological Trust – Canterbury City Sites – No 8 Palace Street'. *Archaeologia Cantiana.* 127, pp. 321-322.

Anon. Undated. *Lusterware.* Available from: http://en.wikipedia.org/wiki/Lusterware. (Accessed March 2013).

Anon. Undated. *Paper Mills on the River Darenth*. Available from: www.hortonkirbyandsouthdarenth.co.uk/mills.htm (Accessed March 2013).

Anon. Undated. *Porcelain* Available from :http://en.wikipedia.org/wiki/Porcelain. (Accessed March 2013).

Ansoff, H. I. 1957. Strategies for Diversification, *Harvard Business Review*, 35 (5), pp. 113-124.

Apperson, G. L. 1914. *The Social History of Smoking.* London: Martin Secker.

Arkell, T. 2000. 'Interpreting Probate Inventories' in Arkell, T. *et al. When Death do us Part*. Oxford: Leopards Head Press pp. 72-102.

Arkell, T. Evans, N. & Goose, N. 2000. *When Death do us Part*. Oxford: Leopards Head Press.

Armstrong, A. 1995 'Population 1831-1914' in Armstrong, A. *The Economy of Kent 1640-1914.* Woodbridge: Boydell Press pp. 30 – 50.

Armstrong, A. 1995. *The Economy of Kent 1640-1914.* Woodbridge: Boydell Press.

Arnold, C. J. 1977. 'The Clay Tobacco Pipe Industry: an Economic Study' in Peacock D. P. S. *Pottery and Early Commerce: Characterization and Trade in Roman and Later Ceramics*. London: Academic Press, pp. 313-336.

Atkinson, D. R. 1975. *Sussex Clay Tobacco Pipes and Pipemakers.* Published privately.

Atkinson, D. R. 1977. *Sussex Clay Tobacco Pipes and the Pipemakers*. Eastbourne: Crain Services.

Atkinson, D. R. 1984. 'Clay Tobacco Pipes Bearing the Prince of Wales's Feathers in the 19th Century' in *Newsletter of the Society for Clay Pipe Research* 2, pp. 2-7.

Atkinson, D. R. and Oswald, A. 1969. 'London Clay Tobacco Pipes'. *Journal of the British Archaeological Association.* Third Series. 22, pp. 171-227.

Ayto, E. G. 1994. *Clay Tobacco Pipes*. Princes Risborough: Shire Publications Ltd.

Bagshaw. 1847. *History, Gazetteer and Directory of Kent.* Kent: G. Ridge for Bradshaw.

Baker, C. 1979. 'The Clay-Pipe Makers of Overy Street, Dartford, and their Products', *Dartford Historical and Antiquarian Society Newsletter*, 16, pp. 11-17.

Baker, C. 2014. 'Tobacco Pipe Makers' Society Membership Cards'. *Society for Clay Tobacco Research Newsletter*, 85, pp. 50.

Barley, W. M. 1955. 'Farmhouses and Cottages 1550-1725'. *Economic History Review* 7, (3), pp. 291-306.

Barrett, J. C. 1988. 'Fields of Discourse: Reconstructing a Social Archaeology' in *Critique of Anthropology* 7 (5), pp. 5-16.

Barrett, J. C. 2001. 'Agency, the Duality of Structure, and the Problem of the Archaeological Record' in Hodder, I. ed. 2001. *Archaeological Theory Today.* Cambridge: Polity Press pp. 141 – 164.

Baxter, R. 1990. 'Excavations at the Site of the Periwinkle Water Mill, Milton Regis' in *Kent Archaeological Review* 100, pp. 218-228.

Beaudry, M. et al. 1983. 'A Vessel Typology for Early Chesapeake Ceramics: the Potomac Typology System'. *Historical Archaeology*, 17, (1), pp. 18-43.

Beaudry, M. C., Cook, L. J. and Mrozowski, S. A. 1996. 'Artifacts and Active Voices: Material Culture as Social Discourse' in Orser, C. E. (ed). 1996. *Images of the Recent Past*. pp 272 - 310.

Belford, P. 2008. ‘Steel at the Dawn of Capitalism’. *Historical Metallurgy* 42(2), pp. 89-99.

Belford, P. 2009. ‘Rethinking Industrial Origins’. *British Archaeology* 107, pp. 30 – 35.

Belford, P, 2010. ‘Five Centuries of Iron Working: Excavations at Wednesbury Forge’. *Post Medieval Archaeology* 44(1), pp. 1-53.

Bevington, D. 2014. ‘Every Man in His Humour: Stage History’ in *The Cambridge Edition of the Works of Ben Jonson Online.* Cambridge: Cambridge University Press. Available from: http://universitypublishingonline.org/cambridge/benjonson/k/essays/stage_history_EMI/3/ (Accessed 27 July 2014).

Binford, L. R. 1963. ‘A Proposed Attribute List for the Description and Classification of Projectile Points’ in White, A. M. et al. eds. *Miscellaneous Studies in Typology and Classification.* Anthropological papers of the University of Michigan 9. Cited by Clay, R. B. 1976, in ‘Typological Classification, Attribute Analysis and Lithic Variability’. *Journal of Field Archaeology* 34, (3), pp. 303 – 311.

Birks, S. Undated. *Basalt Ware*. Available from: http://www.thepotteries.org/types/basalt_ware.htm (Accessed March 2013).

Board of Trade. 1894. *Report on Strikes and Lockouts of 1892*. London: HMSO.

Booth, A. 2004 ‘Industrial Development Since 1850’ in Lawson, T. and Killingray, D. eds. *An Historical Atlas of Kent.* Chichester: Phillimore. pp. 118-119.

Boswell, J. 1773. *Journal of a Tour to the Hebrides.* London: Folio Society 1990 (and elsewhere).

Bourdieu, P. Translated Nice, R. 1977. *Outline of a Theory of Practice.* Cambridge: Cambridge University Press.

Bourdieu, P. Translated by Nice, R. 1984. *Distinction. A Social Critique of the Judgement of Taste*. Abingdon: Routledge Kegan and Paul.

Bourdieu, P. Translated by Wacquant, L. J. D. 1988. ‘Vive la Crise! For Heterodoxy in Social Science’ *Theory and Society* 17 (5), pp. 773-787.

Bourdieu, P. Translated by Nice, R. 1990. *The Logic of Practice.* Oxford: Polity Press.

Bowsher, J. 2007. ‘Greenwich Tobacco Pipes’. *Newsletter of the Society for Clay Pipe Research* 72, pp. 35-47.

Boyden, B. 2003. *Can Clay Pipes Make a Significant Contribution to Post-Medieval Archaeology?*’. (Unpublished BA extended essay, University of Kent).

Boyden, B. 2009. 'The Clay Tobacco Pipe in English Literature'. *Newsletter of the Society for Clay Pipe Research* 76, pp. 7-14.

Bragdon, K. J. 1988. 'Occupational Differences Reflected in Material Culture' in Beaudry, M. C. ed. *Documentary Archaeology in the New World.* Cambridge: Cambridge University Press, pp. 83-91.

Brassey, R. 1991. 'Clay Tobacco Pipes from the Site of the Victoria Hotel Auckland, New Zealand'. *Australian Historical Archaeology* 9, pp. 27-30.

Broseley Pipeworks. Notes from wall displays on site. Recorded August 2008.

Brumfiel, E. M. 2000. 'On the Archaeology of Choice: Agency Studies as a Research Stratagem' in Dobres, M. and Robb, J. E. eds. *Agency in Archaeology.* London: Routledge, pp. 249-255.

Bryant, C. G. A. and Jary, D. eds. 1991. *Giddens' Theory of Structuration: a Critical Appreciation.* London: Routledge.

Bryant, J. F. 1787. *Verses* (including *His Life*). Published privately.

Burstow, H. 1911. *Reminiscences of Horsham*. Horsham: The Christian Church Book Society.

Caiger, S. 1976. 'Clay Pipes of the Eighteenth and Nineteenth Centuries from Crayford' *London Archaeologist* 2, pp. 16.

Campbell, R. 1747. *The London Tradesman.* London: T. Gardner (1969 reprint Newton Abbot: David & Charles).

Canterbury Archaeological Trust. 2001. Dover Sewers/A20 Project 1991–3: Assessment and Updated Project Design. Available from the Archaeology Data service at: http://archaeologydataservice.ac.uk/archiveDS/archiveDownload?t=arch-1016-1/dissemination/pdf/Dover_A20_Assessment_Report.pdf (Accessed Summer 2015)

Casson, M. 1977. *The Craft of the Potter.* London: BBC.

Chalklin, C. 2004. 'The Growth of Urban Kent, 1700-1901' in Lawson, T. and Killingray, D. eds. *An Historical Atlas of Kent.* Chichester: Phillimore. pp. 100-101.

Chandler, D. G. and Beckett, I. eds. 1996. *The Oxford History of the British Army.* Oxford: Oxford University Press.

Churchill, W S. 1957, *The Age of Revolution.* Cassell: London.

Clague, A. 2000. *Extended Essay on the Origin and Use of Clay Pipes from Timbuktu.* (Unpublished BA paper, University of Manchester).

Clark, P. 1972. ‘The Migrant in Kentish Towns 1580-1640’ in Clark, P. and Slack, P. eds. *Crisis and Order in English Towns 1500-1700, Essays in Urban History*. London: Routledge & Kegan Paul. pp. 117-163.

Clark, P. and Hosking, J. 1993. *Population Estimates for English Small Towns 1550-1851 (Working Paper No 5).* Leicester: Centre for Urban History, University of Leicester.

Clark, P. and Slack, P. eds. 1972. *Crisis and Order in English Towns 1500-1700, Essays in Urban History*. London Routledge & Kegan Paul.

Clarke, H. 1992. ‘An Oral History of Christie's Clay Pipe Workshop’. *Society for Clay Tobacco Research Newsletter*, 35, pp. 13-26.

Clay, R. B. 1976. ‘Typological Classification, Attribute Analysis and Lithic Variability’. *Journal of Field Archaeology* 34 (3), pp. 303 – 311.

Cochran, M. D. and Beaudry. M. C. 2006. ‘Material Culture Studies and Historical Archaeology’. in Hicks, D. and Beaudry, M. C. eds. *The Cambridge Companion to Historical Archaeology.* Cambridge: Cambridge University Press, pp. 191-204.

Coleman, H. 2006. ‘*The Art and Archaeology of Clay Tobacco Pipes*’. CD and sleeve notes.

Connerton, P. 1989. *How Societies Remember.* Cambridge: Cambridge University Press.

Coupe, G. *c.* 1975. *Extended Essay on Clay Tobacco Pipes from Stafford*. (Unpublished BA paper, University of Sheffield).

Courtney, P. 2009. ‘The Current State and Future Prospects of Theory in European Post-Medieval Archaeology’ in *International Handbook of Historical Archaeology.* Gaimster, D. and Majewski, T. eds. New York: Springer Science and Business Media. pp. 169-189.

Cowper, J. M. ed. 1901. *The Diary of Thomas Cocks 25 March 1607 to 31 December 1610.* Canterbury (?): published privately.

Cox, H. 2000. *The Global Cigarette: Origins and Evolution of British American Tobacco 1880-1945.* Oxford: Oxford University Press.

Cox, J. and Cox, N. 2000. ‘Probate 1500-1800: a System in Transition’ in Arkell, T, Evans, N, & Goose. eds. *When Death do us Part*. Oxford: Leopards Head Press, pp. 14-37.

Crossley, D. 1975. ‘Bewl Valley Ironworks 1300-1730’. A Royal Archaeological Institute Monograph.

Croucher, S. K. and Weiss, L. 2011. *The Archaeology of Capitalism in Colonial Contexts.* New York: Springer Science and Business Media.

Croucher, S. K. and Weiss, L. 2011. 'The Archaeology of Capitalism in Colonial Contexts, an Introduction: Provincializing Historical Archaeology' in Croucher, S. K. and Weiss, L. 2011. *The Archaeology of Capitalism in Colonial Contexts.* New York: Springer Science and Business Media. pp 1 – 37.

Dartford Town Archive. Undated. *J & E Halls Ltd. and the Refrigeration Revolution.* Available from: www.dartfordarchive.org.uk/20th_century/industry_halls.shtml (Accessed March 2013).

Davey, P. J. ed. 1979. *The Archaeology of the Clay Pipe No 1, Britain: the Midlands and Eastern England.* British Archaeological Reports British Series 63. Oxford: British Archaeological Reports.

Davey, P. J. ed. 1987. *The Archaeology of the Clay Pipe No 10, Scotland.* British Archaeological Reports British Series 178. Oxford: British Archaeological Reports.

Davey P. 2009. 'The Seventeenth Century Clay Pipe Industry in Britain, Ireland and the Atlantic World' in Horning, A. and Brannon, N. (eds) 2009. *Ireland and Britain in the Atlantic World.* Dublin: Worldwell Ltd. pp 181 - 202

Davey, P. J. and Rutter, J. A. 1980. 'Clay Pipes from Chester' in Davey, P. J. ed. *The Archaeology of the Clay Tobacco Pipe III: Britain – the North and West* British Archaeological Reports. British Series 78. Oxford: British Archaeological Reports, pp. 41-291.

David, B. 2004. 'Intentionality, Agency and an Archaeology of Choice' . *Cambridge Archaeological Journal* 14 (1) pp. 67-71.

Davies, G. J. 1982. 'Tobacco Pipe Clay in Poole's Coastal Trade 1700-1741'. *Somerset and Dorset Notes and Queries* 31, (316). pp. 235-238.

Deagan, K. 2013. Review article: 'C.E.Orser A Historical Archaeology of the Modern World'. *American Antiquity* 62 (1). pp 163 - 164.

Deetz, J. 1977 and 1996. *In Small Things Forgotten: an Archaeology of Early American Life* New York, Anchor Books.

Deetz, J. 1988. 'American Historical Archaeology: Methods and Results' *Science* 239, pp. 361-367.

Delle, J. 1997. Review Article 'The Archaeology of Capitalism' by Johnson, M. *Antiquity* 71 (274), pp. 1093-1095.

Dickens, C. 1850. *David Copperfield*. Harmondsworth: Penguin Books Ltd.

Dobres, M. 2000. *Technology and Social Agency*. Oxford: Blackwell.

Dobres, M. and Robb, J. E. eds. 2000. *Agency in Archaeology.* London: Routledge.

Dobres, M. and Robb, J. E. 2005. ' 'Doing' Agency: Introductory Remarks on Methodology'. *Journal of Archaeological Method and Theory* 12 (3), pp. 159-166.

Doran, J. E. and Hodson, F. R. 1975. *Mathematics and Computers in Archaeology*. Edinburgh: Edinburgh University Press (cited in http://wikipedia.org/wiki/typology_%28archaeology%29 (Accessed 8 March 2010).

Dorman, T. 1893. 'Extracts from the Account Books of Capt. John Harvey, RN, Mayor of Sandwich 1774-5'. *Archaeologia Cantiana,* 20, pp. 222 – 228.

Dornan, J. L, 2002. 'Agency and Archaeology: Past, Present and Future Directions' in *Journal of Archaeological Method and Theory,* 9 (4), pp. 303-329.

Dover Express and East Kent News:13 January 1905. '*Transfer Refused*'. Available from: http://www.dover-kent.com/Crown-London-Road.html . (Accessed August 2013).

Dover Kent Archives: Fremlins. (Skelton, P.) Undated. Available from: www.dover-kent.com/Breweries/Fremlins-Brewery-Maidstone.html (Accessed March 2013).

Edwards, C. 2007. 'Excavations at Fremlin Walk, Maidstone'. *Archaeologia Cantiana* 127, pp. 73-106.

Edwards, E. 2004. 'The Stranger Populations, Immigration and Settlement' in Lawson, T. and Killingray, D. eds. *An Historical Atlas of Kent.* Chichester: Phillimore. pp. 86-87.

England and Wales National Probate Calendar 1858-1966. Available from: http://home.ancestry.co.uk (Accessed January 2013).

Faversham town promotional site. Available from: www.faversham.org/visit_faversham.aspx. (Accessed 10 December 2012).

Fielding, H. 1742. *The History of the Adventures of Joseph Andrews and his Friend, Mr. Abraham Abrams.* Available from: http://www.gutenberg.org/ebooks/9609 and from: http://www.gutenberg.org/ebooks/9611. (Accessed August 2013).

Filmer, R. 1981. *Kentish Rural Crafts and Industries*. Rainham: Meresborough Books.

Filmer, R. 1982. *Kentish Town Crafts*. Rainham: Meresborough Books.

Fisher, S. W. 1970. *English Pottery and Porcelain Marks.* Slough: W Foulsham & Co.

Fletcher, E. 1977. '*Clay Pipes'.* Southampton: Southern Collectors Publications.

Floore, P. M. and Jayasena, R. M. 2010. 'In Want of Everything? Archaeological Perceptions of a Dutch Outstation on Mauritius (1638-1710)'. *Post-Medieval Archaeology* 44(2), pp. 320-340.

Fog's Weekly Journal dated 9 November 1728. Available at Liverpool University Library website (Accessed 1 June 2012).

Fox, G. L. 1999. *The Kaolin Clay Tobacco Pipe Collection from Port Royal, Jamaica.* British Archaeological Reports International Series 809. Oxford: British Archaeological Reports.

Fox, G. L. 2002. 'Interpreting Socioeconomic Changes in Seventeenth Century England and Port Royal, Jamaica, Through Analysis of the Port Royal Kaolin Clay Pipes'. *International Journal of Historical Archaeology* 6 (1), pp. 61-78.

Gallagher, D. B. 1986. 'Glasgow Pipe Mould Makers'. *Newsletter of the Society for Clay Pipe Research* 9, pp. 10-13.

Gallagher, D. B. 1987. 'Tobacco Pipemaking in Glasgow 1667-1967' in Davey, P. J. ed. *The Archaeology of the Clay Pipe No 10, Scotland.* British Archaeological Reports British Series 178. Oxford: British Archaeological Reports, pp. 35 – 163.

Gallagher, D B. 2012. 'The Social Conditions of Pipe Makers in Nineteenth Century Glasgow'. *Journal of the Academie Internationale de la Pipe* 5, pp. 107-110.

Gardner, A. 2004a. 'Agency and Community in Fourth Century Britain: Developing the Structurationist Project' in Gardner, A. ed. *Agency Uncovered: Archaeological Perspectives on Social Agency, Power and Being Human.* London: University College London Press. pp. 33 – 50.

Gardner, A. 2004b. 'Introduction: Social Agency, Power and Being Human' in Gardner, A. ed. *Agency Uncovered: Archaeological Perspectives on Social Agency, Power and Being Human.* London: University College London Press. pp. 1-18

Gardner, E. M. 1958. 'East Sussex Inventories' in *Sussex Notes and Queries* 15 May 1958, pp. 123-126.

Gates, D. 1996. 'The Transformation of the Army 1783-1815' in Chandler, D. G. and Beckett, I. eds. *The Oxford History of the British Army.* Oxford: Oxford University Press, pp. 132-160.

Giddens, A. 1984. *The Constitution of Society.* Oxford: Blackwell (Polity Press).

Giddens, A. 1989. 'A Reply to my Critics' in Held, D and Thompson, J. B. eds. *Social Theory of Modern Societies: Anthony Giddens and his Critics.* Cambridge: Cambridge University Press, pp. 249-301.

Giddens, A. 1991. 'Structuration Theory: Past, Present and Future' in Bryant, C. G. A. and Jary, D. eds. *Giddens' Theory of Structuration: a Critical Appreciation.* London: Routledge, pp. 201-221.

Giddens, A. 2009. *Sociology*. Cambridge: Polity Press.

Giles, K. 2000. *An Archaeology of Social Identity: Guildhalls in York c. 1350-1630.* British Archaeological Reports British Series 315. Oxford: British Archaeological Reports.

Goff, M., Goldfinch, J., Limper-Herz, K., and Penden, H. 2013. *Georgians Revealed: Life, Style and the Making of Modern Britain.* London: The British Library.

Gojak, D. and Stuart, I. 1999. 'The Potential for the Archaeological Study of Clay Tobacco Pipes from Australian Sites' *Australasian Historical Archaeology,* 17, pp. 38-49.

Goodman, J. 1993. *Tobacco in History: the cultures of dependence.* London: Routledge.

Gosden, C. 2005. 'What do Objects Want?' *Journal of Archaeological Method and Theory* 12(3), pp. 193-211.

Grace's Guide. Undated. *John Penn & Sons.* Available at: www.gracesguide.co.uk/John_Penn_and_Sons (Accessed March 2013).

Grace's Guide. Undated. *Siemens Brothers and Co.* Available at: www.gracesguide.co.uk/Siemens_Brothers_and_Co (Accessed March 2013).

Graves, C. P. 2000. *The Form and Fabric of Belief: an Archaeology of the Lay Experience of Religion in Medieval Norfolk and Devon.* British Archaeological Reports British Series 311. Oxford: British Archaeological Reports.

Gray, A. 2009, '*Man is a Dining Animal – the Archaeology of the English at Table*'. (Unpublished PhD thesis. University of Liverpool).

Gray, A. 2010. 'The Greatest Ordeal: Using Biography to Explore the Victorian Dinner'. *Post-Medieval Archaeology* 44(2), pp. 255-272.

Green, J. N. 1977. *The loss of the Verenigde Oostindische Compagnie Jacht 'Vergulde Draeck', Western Australia 1656.* British Archaeological Reports Supplementary Series No 36. Oxford: British Archaeological Reports.

Green, M. J. E. 1858 and 1863. *Calendar of State Papers, Domestic Series* for 27 May and 30 August 1620, pp. 148 & 175, (James 1) and for 16 December 1664, pp. 116 (Charles ll). London: Longman, Green, Longman, Rogers and Green.

Grover, M. D. 2002. 'Capitalism' in Orser, C. E. *A Historical Archaeology of the Modern World.* New York: Plenum Press. pp 82-85.

Hackwood, F. W. 1909. *Inns, Ales and Drinking Customs of Old England*. London: Fisher Unwin.

Hall, M. 1992. 'Small Things and the Mobile, Conflict Confusion of Power, Fear and Desire' in Yentsch, A. E. and Beaudry, M. C. eds. *The Art and Mystery of Historical Archaeology. Essays in honour of James Deetz.* Boca Ranton: CRC Press Inc. pp. 373-399.

Hall, M. and Silliman, S. W. eds. 2006. *Historical Archaeology.* Oxford: Blackwell Publishing.

Hallet, M. and Riding C. 2006. 'Hogarth' (exhibition catalogue). London: Tate Publishing.

Hammond, P. 1985 and 1988. *Registered and Patented Clay Tobacco Pipes*. Published privately [the earlier edition is included in Davey, P. J. ed. 1985. *The Archaeology of the Clay Pipe Number 9: More Pipes from the Midlands and Southern England.* British Archaeological Reports British Series 146. Oxford: British Archaeological Reports, pp. 28-156.].

Hammond, P. 2009. 'Ebenezer Church: Clay Tobacco Pipe Manufacturer of Pentonville, London'. *Transactions of the London and Middlesex Archaeological Society* 60, pp. 225-248.

Harley, L. S. 1963. *The Clay Tobacco Pipe in Britain, with Special Reference to Essex and East Anglia.* Essex Field Club, Grays: Essex.

Harrington, J. C. 1954. 'Dating Stem Fragments of Seventeenth and Eighteenth Century Tobacco Pipes'. *Bulletin of the Archaeological Society of Virginia* 9, pp. 1-20.

Harris, O. 2003. *'Performance Practice: Identifying Agency at the Causewayed Enclosures of Windmill Hill and Etton'.* (Unpublished MA dissertation, University of Cardiff). Available from: http://www.hardav.co.uk/MA - HTML/front cover.htm . (Accessed 30 November 2011).

Hartwell, R. M. 1965. *The Industrial Revolution in England* London: Historical Association.

Heard, K. 2012. '*London Clay Pipe Studies*'. Available from:. http://www.kieronheard.com/pipes/abstracts.htm . (Accessed 23/09/2012).

Heard, K. Personal internet site. Available from: http://www.kieronheard.com/index.htm (Accessed 16 December 2012).

Held, D. and Thompson, J. B. 1989. *Social Theory of Modern Societies: Anthony Giddens and his Critics.* Cambridge: Cambridge University Press

Hibbert, C. 1975. 'The Oppressed' in *The Illustrated London News, Social History of Victorian Britain*, London: Angus and Robertson, pp. 126 – 138.

Hicks, D. and Beaudry M. C, eds. 2006. *The Cambridge Companion to Historical Archaeology.* Cambridge: Cambridge University Press.

Higgins, D. A. 1981. 'Surrey Clay Tobacco Pipes' in P. Davey. ed. *The Archaeology of the Clay Tobacco Pipe 6: Pipes and Kilns in the London Region.* British Archaeological Reports. British Series 97. Oxford: British Archaeological Reports, pp. 189-293.

Higgins, D. A. 1995. 'Clay Tobacco Pipes: a Valuable Commodity' *The International Journal of Nautical Archaeology* 24(1), pp. 47-52.

Higgins, D. A. 1997. 'The Identification, Analysis and Interpretation of Tobacco Pipes from Wrecks' in *Artefacts from Wrecks.* Redknapp, M. ed. Oxford: Oxbow Monographs, pp. 129-136.

Higgins, D. A. 2006 (research prepared 1998). 'Clay Tobacco Pipes' in Brown N. R. 'A Medieval Moated Manor by the Thames Estuary: Excavations at Southchurch Hall, Southend, Essex', *East Anglian Archaeology* 115, pp. 1-148: section 5, pp. 118-125.

Higgins, D. A. 2008. 'Clay Tobacco Pipes' in Meredith, J. *et al* 'Excavations at Landguard Fort: an investigation of the 17th-century defences'. *Post-Medieval Archaeology*, 42(2) pp. 258-269.

Higgins, D. A. 2012a. 'The Earliest Known Clay Tobacco Pipe Mould'. *Post-Medieval Archaeology* 46(2) pp. 360-366.

Higgins, D. A. 2012b. 'Two important London Collections for the National Pipe Archive'. *Newsletter of the Society for Clay Pipe Research* 81, pp. 47-50.

Higgins, D. A. & Davey, P. J., 2004. 'Appendix 4: Draft Guidelines for Using the Clay Tobacco Pipe Record Sheets' in White, S.D. *The Dynamics of Regionalisation and Trade: Yorkshire Clay Tobacco Pipes c. 1600-1800*. The Archaeology of the Clay Tobacco Pipe, XVIII, British Archaeological Reports British Series 374. Oxford: British Archaeological Reports, pp. 487-490.

Hill, J. N. and Evans, R. K. 1972. 'A Model for Classification and Typology' in Clarke, D. L. ed. *Models in Archaeology.* London: Methuen pp. 231 – 273.

Hilton-Price, F. G. 1900. 'Notes Upon Some Early Clay Tobacco Pipes from the Sixteenth to Eighteenth Centuries in the City of London'. *Archaeological Journal* 57, pp. 224-240.

Hodder, I. ed. 2001. *Archaeological Theory Today.* Cambridge: Polity Press.

Hoderness, B. A. 1975. 'Credit in Rural Communities'. *Midland History* 3, pp. 94-115.

Hodson, F. R. 1982. 'Some Aspects of Archaeological Classification' in Whallon, R. and B. James. eds. *Essays on Archaeological Typology.* Evanston, Illinois: Centre for American Archaeology pp. 21–29.

Horning, A. and Brannon, N. (eds) 2009. *Ireland and Britain in the Atlantic World.* Dublin: Worldwell Ltd.

Housley, E. G. ed. 2000. *Recollections of a Clay Pipe Maker's Son 1859-1883*. Nottingham: Miliquest Publications. See also Peacey, Allan 1996.

Hudson, P. ed. 1989. *Regions and Industries: a Perspective on the Industrial Revolution in Britain*. Cambridge: Cambridge University Press.

Imperial Tobacco. Undated. *Imperial Tobacco History.* Available from: http://www.imperial-tobacco.co.uk/index.asp?page=43. (Accessed 10 October 2014).

Jackson, R., Jackson P. and Hammond P. 1991. 'SCPR Visit to Jersey', *Newsletter of the Society for Clay Pipe Research* 31, pp. 2-7.

James 1st, 1604. *A Counterblaste to Tobacco.* Available at: http://www.jesus-is-lord.com/kjcounte.htm. (Accessed 7 August 2010).

Jarrett, C. 2000. *Seagar's Distillery, Deptford – Assessment of the Clay Tobacco Pipes and Pipe Clay Figurine.* Report prepared by Pre Construct Archaeology Ltd. London: PCA.

Jarrett, C. 2002a. *The Bell, Sittingbourne, Kent – Clay Tobacco Pipe Assessment.* Report prepared by Pre Construct Archaeology Ltd. London: PCA.

Jarrett, C. 2002b. *117 High Street, Rainham, Kent – Clay Tobacco Pipe Assessment.* Report prepared by Pre Construct Archaeology Ltd. London: PCA.

Jarrett, C. 2004. *Gravesend and North Kent Hospital – The Clay Tobacco Pipes*. Report prepared by Pre Construct Archaeology Ltd. London: PCA.

Jarrett, C. 2008. *Payne's & Borthwick Wharf, Greenwich – Assessment of the Clay Tobacco Pipes*. Report prepared by Pre Construct Archaeology Ltd. London: PCA.

Jarzembowski, E. 1984. 'A Pipe-Clay Cigarette Holder'. *Newsletter of the Society for Clay Pipe Research* 3, 14-15.

Jenkins, R. 1992. *Pierre Bourdieu*. London: Routledge.

Johnson, M. 2000. 'Self-made Men and the Staging of Agency' in Dobres, M. and Robb, J. E. eds. *Agency in Archaeology.* London: Routledge. pp. 213 – 231.

Johnson, M. 2010. *Archaeological Theory: an Introduction*. Chichester: Wiley-Blackwell.

Johnston, J. A. 1991. '*Probate Inventories of Lincoln 1661-1714*'. Lincoln: Lincolnshire Records Society.

Joyce, A. A. 2000. 'The Founding of Monte Albán' in Dobres, M. and Robb, J. E. eds. 2000. *Agency in Archaeology.* London: Routledge. pp. 71- 91.

Joyce, R. A. & Lopiparo, J. 2005. 'PostScript: Doing Agency in Archaeology'. *Journal of Archaeological Method and Theory,* 12(4), pp. 365-374.

Jung, P. 1986. 'A Note on the W. T. Blake Factory'. *Newsletter of the Society for Clay Pipe Research* 9, pp. 16-20.

Jung, S. P. Jr. with Higgins, D. A. ed. 2003. *Pollocks of Manchester: Three Generations of Clay Tobacco Pipemakers*. The Archaeology of the Clay Tobacco Pipe 17. British Archaeological Reports British Series 352. Oxford: British Archaeological Reports.

Kant, I. 1781. Translated by Smith, N. K. 1929. *The Critique of Pure Reason.* London: Macmillan.

Karshner, M. 1979. 'The Clay Tobacco Pipe Making Industry in Norwich' in Davey, P. J. ed. 1979. *The Archaeology of the Clay Pipe No 1, Britain: the Midlands and Eastern England.* British Archaeological Reports British Series 63. Oxford: British Archaeological Reports, pp. 295-352.

Kelly's Directory of Kent 1862 and subsequently. London: Kelly's Directories.

Kent History and Library Centre. 2010. *Apprentices Database CD.* Created privately.

Kearsley, G. 1787. *Kearsley's Table of Trades*. London: Johnson's Head.

Kipfer, B. A. 2007. *The Archaeologist's Fieldwork Companion*. Oxford: Blackwell.

Klein, T. H. 1991. 'Nineteenth Century Ceramics and Models of Consumer Behaviour'. *Historical Archaeology,* 1991, 25(2), pp. 77-91.

Kopytoff, A. 1986. 'The Cultural Biography of Things: Commoditization as Process' in Appadurai, A. ed. *The Social Life of Things: Commodities in Cultural Perspective*. Cambridge: Cambridge University Press, pp. 64-91.

Kuper, A. 2009. 'Claude Lévi-Strauss: Intellectual Considered the Father of Modern Anthropology Whose Work Inspired Structuralism'. Obituary in the newspaper *The Independent* on 4 November 2009.

Lane, J. 1996. *Apprenticeship in England 1600-1914.* London: University College London Press.

Langton, J. 1984. 'The Industrial Revolution and the Regional Geography of England'. *Transactions of the Institute of British Geographers*, New Series, 9 (2), pp. 145-167.

Langton, J. and Morris, R.J. eds. 1986. *Atlas of Industrializing Britain 1780-1914*. London: Methuen.

Larking, L. B. 1859 & 1860. 'Sir Roger Twysden's Journal' *Archaeologia Cantiana,* 2, (1859) pp. 175-220 and 3, (1860) pp. 145-176.

Lawson, T. 2004. 'Rural Population Trends to 1901' in Lawson, T. and Killingray, D. eds. *An Historical Atlas of Kent.* Chichester: Phillimore. pp. 102-103.

Lawson, T. and Killingray, D. eds. 2004. *An Historical Atlas of Kent.* Chichester: Phillimore.

Le Cheminant, R. 1984. 'The beginning of the Clay Tobacco Pipe Industry' *Newsletter of the Society for Clay Pipe Research* 4, pp. 28-34.

Leclaire, A, translated by Wilson, A. and David, S. 2007. 'The Use of Laurel Branches as Pipe Decoration in Saint-Quintin-la-Poterie, France' in *Newsletter of the Society for Clay Pipe Research* 71, pp. 42-48.

Legear, R. 2007. Underground Ragstone Quarries in Kent: a brief overview. *Archaeologia Cantiana* 127, pp. 407-419.

Leone, M. P. 1995. 'A Historical Archaeology of Capitalism'. *American Anthropologist* 97(2) pp. 251-268.

Lewcun, M. 1997. 'Kent Pipemaking Partnership Bankrupt.' *Newsletter of the Society for Clay Pipe Research* 45, pp. 7.

Lockett, T. Undated. *Pearlware.* Origins and Types. Available from:. http://www.thepotteries.org/features/pearlware.htm. (Accessed March 2013).

Loktu, L. 2009. *Clay Pipes as Habitus: an Archaeological Study of Tobacco Consumption with Special Reference to Seventeenth Century Trondheim.* (Unpublished MA thesis, Norwegian University of Science and Technology.).

London Gazette, the UK's Official Public Record. *Publications dated: 26.10.1880, 17.1.1930 and 22.11.1932.* Available from: www.london-gazette.co.uk/search. (Accessed March 2013).

London Metropolitan Archives. Available from: http://home.ancestry.co.uk (Accessed June 2012).

London Standard for 5 July 1897. pp. 3. Available from: www.britishnewspaperarchive.co.uk (Accessed August 2014).

Loren, D. D. and Beaudry, M. C. 2006. 'Becoming American: Small Things Remembered' in Hall, M. and Silliman S W. eds. *Historical Archaeology.* Oxford: Blackwell Publishing, pp. 251-271.

Lucas, G. 2006. 'Historical Archaeology and Time' in Hicks, D. and Beaudry, M. C. eds. *The Cambridge Companion to Historical Archaeology.* Cambridge: Cambridge University Press, pp. 34-47.

MacDougall, P. 2004. 'The Kentish Royal Dockyards 1700-1900' in Lawson, T. and Killingray, D. eds. 2004. *An Historical Atlas of Kent.* Chichester: Phillimore pp. 134-135.

Magoon, D. T. 1999. ' "Chesapeake" Pipes and Uncritical Assumptions: a View from Northeastern North Carolina', North Carolina Archaeology 48, 1999. pp 107 – 126.

Majewski, T. and Schiffer, M. B. 2009. 'Beyond Consumption: Towards an Archaeology of Consumerism' in Majewski, T. and Gaimster, D. eds. *The International Handbook of Historical Archaeology.* Springer: New York. pp. 191-207.

Marx, K. 1852 (2005). *The Eighteenth Brumaire of Louis Bonaparte* New York: Mondial.

Matthews, C. N. 2005. 'Public Dialectics: Marxist Reflections in Archaeology'. *Historical Archaeology* 39 (4), pp 26 - 44.

McLean, J. 2007. 'Clay Pipe Making in Plumstead' *Newsletter of the Society for Clay Pipe Research* 72, pp. 28-29.

Medway Navigation Company, Freight Account Ledgers & Journal 1627 to 1936. Available from the Medway Archives and Local Studies Centre.

Mehler, N. 2009. 'The Archaeology of Mercantilism: Clay Tobacco Pipes in Bavaria and the Contribution to an Economic System'. *Post-Medieval Archaeology* 43(2), pp. 261 – 281.

Mellor, I. 2005. 'Space, Society and the Textile Mill' *Industrial Archaeology Review,* 27 (1), pp. 49-56.

Melville and Co. 1858. *Directory of Kent*. London: City Press.

Middleton, A. 2008. *Te Puna – a New Zealand Mission Station*. New York: Springer.

Mitchell, B. R. 1988. *British Historical Statistics*. Cambridge: Cambridge University Press.

Moore, J. S. 1985. 'Probate Inventories – problems and prospects' in Riden, P. ed. *Probate Records and the Local Community.* Gloucester: Alan Sutton Publishing Ltd., pp. 11-28.

Moore, W. R. G. 1980. *Northamptonshire Clay Tobacco Pipes and Pipemakers*. Northampton: Northampton Museums and Art Gallery.

Mrozowski, S. A. 2006. 'Environments of History: Biological Dimensions of Historical Archaeology' in Hall, M. and Silliman, S. W. (eds). *Historical Archaeology.* Oxford: Blackwell. pp 23 – 41.

Mytum, H. 2010a. 'Ways of Writing in Post-medieval and Historical Archaeology: Introducing Biography'. *Post-Medieval Archaeology* 44(2), pp. 237-254.

Mytum, H. 2010b. 'Biographies of Projects, People and Places: archaeologists and William and Martha Harries at Henllys Farm, Pembrokeshire'. *Post-Medieval Archaeology* 44(2), pp. 294-319.

Mytum, H. 2013. 'Ceramics, Furniture and Distributed Agency of People and Things in 19th Century Cottages of Western Britain and Ireland'. *Medieval Ceramics* 34, pp. 55-65.

Napier, D. Undated. *W.D. & H. O. Wills: Pacemakers in Tobacco*. Available from: www.davenapier.pwp.blueyonder.co.uk/wills/wdhowill.htm (Accessed March 2013).

National Pipe Archive. Internet site available from: http://www.pipearchive.co.uk/. (Accessed 23 September 2012 and subsequently).

Noël Hume, I. 1985. 'Artifacts of Colonial America: Parts of an English Pipe and the Evolution of English Clay Tobacco Pipes 1580-1860' in his *Artifacts of Colonial America. 1985.* pp. 303. Quoted on the Internet by the Texas Agricultural and Mechanical University. Also available in Kipfer, B. A. 2007. *The Archaeologist's Fieldwork Companion*. Oxford: Blackwell, pp. 8. Available at: www.nautarch.tamu.edu/class/313/pipes/pipes.htm (Accessed 25 January 2010).

Nonlinear Physics, University of Toronto. Undated. *Dendritic patterns on Mochaware Pottery.* Available from: http://www.physics.utoronto.ca/~smorris/edl/mochaware/mochaware.html . (Accessed March 2013).

Norton, J. 1991. 'The Clay Pipe as a Murder Weapon'. *Newsletter of the Society for Clay Pipe Research,* 29, pp. 20.

Oak-Rhind, H. 1980. 'Distribution of Clay Tobacco Pipes Round Their Place of Manufacture' in Davey, P. J. ed. *Archaeology of the Clay Tobacco Pipe* 3 Britain the North and West. British Archaeological Reports British Series 78, pp. 349-361.

Orser, C. E. Jr. 1996. *A Historical Archaeology of the Modern World*. New York: Plenum.

Oswald, A. 1960. 'The Archaeology and Economic History of English Clay Tobacco Pipes'. *Journal of the British Archaeological Association* Third Series 23, pp. 40-102.

Oswald, A. 1970. 'The Clay Tobacco Pipe. Its Place in English Ceramics'. *English Ceramics Circle Transactions* 7(3) pp. 222-245.

Oswald, A. 1975. *Clay Pipes for the Archaeologist*. British Archaeological Reports British Series 14. Oxford: British Archaeological Reports.

Oswald, A. 1986. 'Pipes in Pictures of the Seventeenth Century'. *Newsletter of the Society for Clay Pipe Research* 9, pp. 13-16.

Overton, M. Whittle, J. Dean, D. and Hann, A. 2004. *Production and Consumption in English Households 1600-1750.* London: Routledge.

Oxford Archaeological Unit. 2001. *1-9 Overy Street, Dartford, Kent (Report on Archaeological Investigation During Conversion).* Oxford: Oxford Archaeological Unit.

Page, W. ed. 1908 & 1932. *Victoria County History of Kent* 3. London: St Catherine Press.

Pauls, E. P. 2006. 'The Place of Space: Architecture, Landscape and Social Life' in Hall, M. and Silliman S. W. eds. *Historical Archaeology.* Oxford: Blackwell Publishing, pp. 65-83.

Peacey, A. 1996a. *'The Development of the Clay Tobacco Pipe Kiln in the British Isles'* . The Archaeology of the Clay Tobacco Pipe 14. Davey, P. J. (editor) British Archaeological Reports British Series 246. Oxford: British Archaeological Reports. Also available from the Internet at: http://intarch.ac.uk/journal/issue1/peacey_index.html .(Accessed 23 September 2012).

Peacey, A. 1996b. 'The Watkinson Journal', part 4 of 'The Development of the Tobacco Pipe Kiln in the British Isles'. *Internet Archaeology* 1. Available from: http://intarch.ac.uk/journal/issue1/peacey/app2.html . (Accessed March 2010). See also Housley, Erica Gillian (2000).

Peacey, A. and Vince, A. 2003. 'Chemical Characterization of Clay Pipes and Wig Curlers from Roy's Orchard, Pipe Aston, Herefordshire'. *Post-Medieval Archaeology* 37(2), pp. 207- 216.

Pearce, J. 2000. 'Uxbridge Inn Clearance: the Clay Tobacco Pipes' *Post-Medieval Archaeology* 34, pp. 167-168.

Pearce, J. 2007. 'Living in Victorian London: the Clay Pipe Evidence'. *Research for the 'Living in Victorian London' project, Geography Dept, Queen Mary University of London. Available from:* www.geog.qmul.ac.uk/victorianlondon/pdf/ClayPipe.pdf . (Accessed June 2010).

Peterson, B. Undated. *Sprigging* Available from: http://pottery.about.com/od/potteryglossaryqs/g/sprig.htm. (Accessed March 2013).

Phillips, C. B. 1985. 'Probate Records and the Kendal Shoemakers' in Riden, P. ed. *Probate Records and the Local Community*. Gloucester: Alan Sutton, pp. 29-52.

Pigot's Directory for Kent 1823/24 and subsequently. London: James Pigot & Co.

Pollock, G. 2005. 'An Unusual Labour Exchange in Manchester'*. Newsletter of the Society for Clay Pipe Research* 68, pp. 29.

Post Office *Directory of Essex, Herts., Kent, Middlesex, Surrey and Sussex*. 1845, 1851, 1852, 1855 and 1867. London: Kelly & Co.

Preston, J. 1995. 'Industry 1800-1914' in Armstrong, A. 1995. *The Economy of Kent 1640-1914.* Woodbridge: Boydell Press, pp. 110 – 123.

Preston, J. 2004. 'Industrial Expansion 1700-1850' in Lawson, T. and Killingray, D. eds. *An Historical Atlas of Kent.* Chichester: Phillimore. pp. 113-114.

Rafferty, S. and Mann, R. 2004. *Smoking and Culture*. Knoxville: University of Tennessee Press.

Raistrick, A. 1950. *Quakers in Science and Industry.* London: Bannisdale Press.

Reay, B. 1991. 'The Context and Meaning of Popular Literacy: Some Evidence from Nineteenth-Century Rural England'. *Past and Present*, 131 pp 89-129'

Reed, M. ed. 1988. *Buckinghamshire Probate Inventories 1661 – 1714.* Buckingham: Buckinghamshire Record Society.

Riley, R. and Yoward, T. 2001 'Structuration Theory and Nineteenth Century Corn Milling in Portsmouth' *Industrial Archaeology Review,* 23(2) pp. 85-92.

Salmon, J. 1908. *Salmon's Sevenoaks Directory*. Sevenoaks: Salmon.

Sassaman, K. E. 2000. 'Agents of Change in Hunter-gatherer Technology' in Dobres, M. and Robb, J. E. eds. 2000. *Agency in Archaeology.* London: Routledge, 148 – 168.

Schumpeter , E. 1960. *English Overseas Trade Statistics 1697 – 1808*. Oxford: Clarendon Press.

Sear, D. R. and Loosley, R. (revisers). 1978. *Roman Silver Coins, Volume 1: The Republic to Augustus.* Third edition, originally by Seaby, H. A.. London: Seaby.

Sikes, K. 2008. 'Stars as Social Space? Contextualizing Seventeenth-Century Chesapeake Star-Motif Pipes' *Post-Medieval Archaeology* 42 (1), pp 75 - 103.

Skelton, P. Undated. *Kent Public House Archive.* Available from: http://www.dover-kent.com/crown-london-road.html (Accessed 21 August 2013).

Smith, A. 1776. (1976) *An Inquiry into the Nature and Causes of the Wealth of Nations*. Oxford: Clarendon Press.

Smith, P. 2009. 'The Tobacco Trade' found on a promotional Internet site for Bideford town. Available from: http://www.bidefordheritage.co.uk/tobacco.html (Accessed 10 December 2012).

Society for American Archaeology. *Website.* Available from: http://www.saa.org/AbouttheSociety/EducationandOutreach/CurriculumLinks/ArchaeologyintheClassroom/EssentialConcepts/tabid/210/Default.aspx. (Accessed 23 September 2012).

Society for Clay Pipe Research. *Website.* Available from: http://scpr.co/ . (Accessed 1 September 2008 and subsequently).

Society for Historical Archaeology. *Website.* Available from: http://www.sha.org/ (Accessed 23 September 2012).

Society for Post-Medieval Archaeology. *Website.* Available from: http://www.spma.org.uk/ . (Accessed January 2011 and subsequently).

Southgate, G. W. 1958. *English Economic History.* London: J. M. Dent & Sons.

Spector, J. D. 1996. 'What this Awl Means' in Preucel, R. & Hodder, I. eds. *Contemporary Archaeology Theory.* Oxford: Blackwell, pp. 485-500.

Spufford, M. 1990. 'The Limitations of the Probate Inventory' in Chartres, J. and Hey, D. 1990. *English Rural Society 1500 to 1800.* Cambridge: Cambridge University Press, pp. 139-174.

Stewart, I. J. 2000. 'Archaeological investigations at Sandwich Castle'. *Archaeologia Cantiana* 120, pp. 51-75.

Stobart, J. 2013. *Sugar and Spice: Grocers and Groceries in Provincial England 1650-1830.* Oxford: Oxford University Press.

Stones, R. 2005. *Structuration Theory*. Basingstoke: Palgrave Macmillan.

Tatman, C. A. 1994. *The Clay Tobacco Pipe Industry in the Parish of Newington, Southwark, London.* The Archaeology of the Clay Tobacco Pipe: 13. Davey P. ed. British Archaeological Reports British Series 239. Oxford: British Archaeological Reports.

Taylor, V. J. 2003. 'Structuration Revisited: a Test Case for an Industrial Archaeology Methodology for Far North Queensland'. *Industrial Archaeology Review,* 25(2), pp. 129-145.

The National Archives. *England & Wales, National Probate Calendar (Index of Wills and Administrations), 1858-1966.* Available from http://home.ancestry.co.uk/ . (Accessed June 2012).

The Universal British Directory. 1792. *The Universal British Directory of Trade, Commerce and Manufacture – Kent section.* (Authors: Barfoot, P. & Wilkes, J.) London: the Patentees.

Thomas, J. 2000. ed. *Interpretative Archaeology.* London: Leicester University Press.

Thompson, J. B. 1989. 'The Theory of Structuration' in Held, D. and Thompson, J. B. *Social Theory of Modern Societies: Anthony Giddens and his Critics.* Cambridge: Cambridge University Press, pp. 56-76.

Tobacco, 1889. *A Monthly Trade Journal for the Importer, Exporter, Manufacturer and Retailer of Tobacco.* London.

Tringham, R. E. 1991. 'Households with Faces: the Challenge of Gender in Prehistorical Architectural Remains' in Gero, J. M. & Konkey, M. W. *Engendering Archaeology: Women and Prehistory.* Oxford: Basil Blackwell, pp. 93-131.

Trubowitz, N. 2004. 'Smoking Pipes' in Rafferty, S. and Mann, R. 2004. *Smoking and Culture.* Knoxville: University of Tennessee Press. pp 143 - 164.

Turnpike Roads in England. Available from: *www.turnpikes.org.uk/The%20Turnpike%20Roads.htm* (Accessed August 2011).

U.K. Census Records 1841 onwards. Kew: National Archives. Available from http://home.ancestry.co.uk/ . (Accessed frequently).

University of Leicester. 2014. *Historical Directories of England & Wales, (*part of Special Collections on Line). Available from: http://leicester.contentdm.oclc.org/cdm/landingpage/collection/p16445coll4/hd/index.asp). (Accessed from May 2014). The predecessor site, formerly available at: http://www.historicaldirectories.org, was accessed between 2008 and 2013 and was withdrawn early in 2014.

Upson-Smith, T. 2008. ‘Excavation at the Corner of Kingswell Street and Woolmonger Street, Northampton. Northamptonshire’. *Archaeology* 35, pp. 205-6.

Valler, D. 2007. ‘Smokers Set Up Snugs in Living Rooms’ in the newspaper *Metro* for 29 June 2007, pp. 31.

Vince, A. and Peacey, A. 2006. ‘Pipemakers and Their Workshops’ in *Between Dirt and Discussion.* Archer, S. N. and Bartoy, K. M. eds. New York: Springer. pp. 11-31.

Walker, W. H. & Lucero, L. J. 2000. ‘The Depositional History of Ritual and Power’ in Dobres, M. and Robb, J. E. eds. *Agency in Archaeology.* London: Routledge. pp. 130 – 147.

Watkinson, G. S. *The Watkinson Journal*. See also Peacey, A. 1996 and Housley, E. G. ed. 2000.

Weatherill, L. 1988. *Consumer Behaviour and Material Culture in Britain 1660-1760.* London: Routledge.

Weber, A. Translated by Joachim, F. C. 1929. *Theory of the Location of Industries.* Chicago: University of Chicago Press.

Weekes, J. 2012. ‘Additional Evidence of Roman (and Later) Occupation Adjacent to the Marlowe Arcade, Canterbury: Excavations at Rose Lane, 2002-4’. *Archaeologia Cantiana* 132, pp. 235-258.

Whallon, R. 1982. ‘Variables and Dimensions: the Critical Step in Quantitative Typology’ in Whallon, R. and Brown, J. eds. *Essays on Archaeological Typology.* Evanston, Illinois: Centre for American Archaeology, pp. 127 – 161.

Whallon, R. and Brown, J. eds. 1982. *Essays on Archaeological Typology.* Evanston, Illinois: Centre for American Archaeology.

Wheat, J., Gifford, J. and Wasley, W. 1958. ‘Ceramic Variety, Type Cluster and Ceramic System in Southwestern Pottery Analysis’. *American Antiquity* 24(1), pp. 34-47.

White, C. L. and Beaudry, M. C. 2009. ‘Artifacts and Personal Identity’ in Majewski, T. and Gaimster, D. eds. *The International Handbook of Historical Archaeology.* Springer: New York. pp. 209-225.

White, S.D. 2004. *The Dynamics of Regionalisation and Trade: Yorkshire Clay Tobacco Pipes c. 1600-1800.* The Archaeology of the Clay Tobacco Pipe: 18. Davey, Peter J. ed. British Archaeological Reports British Series 374. Oxford: British Archaeological Reports.

Wilkie, L. A. 2006. 'Documentary Archaeology' in Hicks, D. and Beaudry, M. C. eds. *The Cambridge Companion to Historical Archaeology.* Cambridge: Cambridge University Press, pp. 13-33.

Wilkie, L. A. 2009 'Interpretive Historical Archaeologies' in Majewski, T. and Gaimster D. R. M. eds. *International Handbook of Historical Archaeology.* New York: Springer. pp. 333-345.

Williams, D. E. 1980. 'Clay Tobacco Pipes from Chatham'. *Archaeologia Cantiana* 95, pp. 231-240.

Witmore, C. 2006. 'Tim Ingold on Categories of Material against Materiality'. Available from: http://traumwerk.stanford.edu/archaeolog/2006/02/tim_ingold_on_categories_of_ma.html (Accessed 12 August 2013).

Wobst, H. M. 2000, 'Agency in (Spite of) Material Culture' in Dobres, M and Robb, J. E. eds. 2000. *Agency in Archaeology.* London: Routledge pp. 40-50.

Woollard, M. 1999. *The Classification of the Occupations in the 1881 Census of England and Wales.* Colchester: University of Essex, Department of History.

Woollard, P. 2007. 'William Luckett: Clay Tobacco Pipe Maker of Plumstead, 1865-1948'. *Newsletter of the Society for Clay Tobacco Research* 72, pp. 21-28.

Woollard, P. Undated. *Some Eighteenth Century Pipemakers, taken from the Parish Registers of St. Paul, Deptford, 1730-1800.* Unpublished draft article, copy held at Greenwich Heritage Centre.

Wurst, LA, and Mrozowski, S. A. 2014. 'Towards an Archaeology of the Future'. *International Journal of Historical Archaeology* 18, pp 210 - 223.

Wylie, A. 1989. 'Archaeological Cables and Tacking: The Implications of Practice for Bernstein's 'Options Beyond Objectivism and Relativism' '. *Philosophy of the Social Sciences* 19(1) pp. 1-18.

Yentsch, A. E. and Beaudry, M. C. 1992 'Introduction to the Background' in Yentsch, A. E. and Beaudry, M. C. eds. *The Art and Mystery of Historical Archaeology. Essays in honour of James Deetz.* Boca Ranton: CRC Press Inc., pp. 3-21.

Yentsch, A. E. and Beaudry, M. C. 1992. *The Art and Mystery of Historical Archaeology. Essays in honour of James Deetz.* Boca Ranton: CRC Press Inc.

Zell, M. 2000. *Early Modern Kent 1540-1640.* Woodbridge: Boydell and Brewer.

Zell, M. and Chalklin, C. 2004. 'Old and New Industries 1500-1700' in Lawson, T. and Killingray, D. eds. *An Historical Atlas of Kent.* Chichester: Phillimore. pp. 74-77.